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=> d his

     (FILE 'REGISTRY' ENTERED AT 14:13:38 ON 27 FEB 2003)
               DEL HIS Y
L1             1 S 25085-02-3

     FILE 'CAPLUS' ENTERED AT 14:15:09 ON 27 FEB 2003
L2          5720 S L1  OR ACRYLAMIDE(3A) (ACRYLIC ACID OR ACRYLATE?)
L3         16396 S SOIL (L) (STABILIZ? OR TREATMENT# )
L4       1223278 S POLYMER# OR COPOLYMER#
L5            45 S L2 AND L3
L6           986 S L3 AND L4
L7        105826 S FERTILIZ?
L8             3 S L5 AND L7
L9            17 S L6 AND L7
L10       182253 S SOIL#/CW
L11        82797 S FERTILIZ?/CW
L12        19842 S L10 AND L11
L13          138 S L4 AND L12
L14         5832 S SOIL# (L) (CONDITION? )
L15        21860 S L14 OR L3
L16           34 S L13 AND L15
L17        23157 S IRRIGAT? OR IRRIGAT?/AB
L18            3 S L16 AND L17
L19        11866 S SOIL# (L) (COMPN? OR COMPOSIT?)
L20          706 S L19 AND L4
L21           15 S L20 AND L10 AND L11
L22           28 S L8 OR L9 OR L18 OR L21

=> fil reg
FILE 'REGISTRY' ENTERED AT 14:21:20 ON 27 FEB 2003
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   26 FEB 2003  HIGHEST RN 495373-62-1
DICTIONARY FILE UPDATES:  26 FEB 2003  HIGHEST RN 495373-62-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d que l1;d l1
L1             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25085-02-3



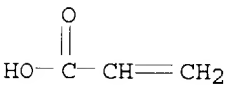
L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
```

RN **25085-02-3** REGISTRY
CN 2-Propenoic acid, sodium salt, polymer with 2-propenamide (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 2-Propenamide, polymer with sodium 2-propenoate (9CI)
CN Acrylamide, polymer with sodium acrylate (8CI)
CN Acrylic acid, sodium salt, polymer with acrylamide (8CI)
OTHER NAMES:
CN 977VHM
CN A 140
CN A 140 (flocculant)
CN A 3116
CN Accofloc A 125
CN Accostrength 86
CN Acrylamide-sodium acrylate copolymer
CN Acrylamide-sodium acrylate polymer
CN AD 17
CN AD 27
CN AD 37
CN AD 60
CN Akrygel
CN AL 30
CN Alcomer 120
CN Alcosorb AB 3C
CN Aronfloc A 101
CN Clarifloc 820
CN Crosfloc CFA 20
CN Crosfloc CFA 80
CN Cyanamer 21
CN EarthGuard
CN EM 533
CN EMA 10
CN Espex L
CN Floconit
CN FN 20H
CN GPC-A 400
CN Hostacerin PN 73
CN Kayafloc A 275
CN Kurifloc PA 372
CN Magnafloc 156
CN Magnafloc LT 30
CN Magnifloc 1883A
CN Nalco 8873
CN Percol 155
CN Percol 336
CN Photafloc 112.5
CN Polyplus
CN Purifloc N 17
CN Pusher 700E
CN R 641-41
CN Reten 421
CN Reten 423
CN Reten 521
CN Reten 523
CN Romacril AGR
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 9047-19-2, 162730-94-1, 59597-84-1, 60182-40-3, 64925-54-8, 62587-58-0, 98616-28-5, 50815-71-9, 119547-31-8, 66038-29-7, 112327-29-4, 73666-83-8, 70699-34-2, 158129-73-8

MF (C3 H5 N O . C3 H4 O2 . Na)x
CI PMS, COM
PCT Polyacrylic
LC STN Files: AGRICOLA, BIOSIS, CA, CAPLUS, CHEMLIST, CIN, CSCHEM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL
Other Sources: DSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

CM 1

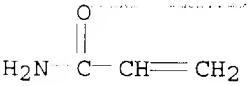
CRN 7446-81-3 (79-10-7)
CMF C3 H4 O2 . Na



● Na

CM 2

CRN 79-06-1
CMF C3 H5 N O



1081 REFERENCES IN FILE CA (1962 TO DATE)
48 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1082 REFERENCES IN FILE CAPLUS (1962 TO DATE)

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 14:21:27 ON 27 FEB 2003
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FILE COVERS 1907 - 27 Feb 2003 VOL 138 ISS 9
FILE LAST UPDATED: 26 Feb 2003 (20030226/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l2-

(FILE 'CAPLUS' ENTERED AT 14:15:09 ON 27 FEB 2003)

L2	5720	S	L1 OR ACRYLAMIDE(3A) (ACRYLIC ACID OR ACRYLATE?)
L3	16396	S	SOIL (L) (STABILIZ? OR TREATMENT#)
L4	1223278	S	POLYMER# OR COPOLYMER#
L5	45	S	L2 AND L3
L6	986	S	L3 AND L4
L7	105826	S	FERTILIZ?
L8	3	S	L5 AND L7
L9	17	S	L6 AND L7
L10	182253	S	SOIL#/CW
L11	82797	S	FERTILIZ?/CW
L12	19842	S	L10 AND L11
L13	138	S	L4 AND L12
L14	5832	S	SOIL# (L) (CONDITION?)
L15	21860	S	L14 OR L3
L16	34	S	L13 AND L15
L17	23157	S	IRRIGAT? OR IRRIGAT?/AB
L18	3	S	L16 AND L17
L19	11866	S	SOIL# (L) (COMPN? OR COMPOSIT?)
L20	706	S	L19 AND L4
L21	15	S	L20 AND L10 AND L11
L22	28	S	L8 OR L9 OR L18 OR L21

FILE 'REGISTRY' ENTERED AT 14:21:20 ON 27 FEB 2003

FILE 'HCAPLUS' ENTERED AT 14:21:27 ON 27 FEB 2003

=> d .ca l22/1-28
YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS' - CONTINUE? (Y)/N:end

=> fil caplus
FILE 'CAPLUS' ENTERED AT 14:21:45 ON 27 FEB 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 27 Feb 2003 VOL 138 ISS 9
FILE LAST UPDATED: 26 Feb 2003 (20030226/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

=> d .ca l22 1-28

L22 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:575028 CAPLUS
DOCUMENT NUMBER: 137:124727
TITLE: Fertilizing **composition** for amending and structuring saline and alkaline **soils**
INVENTOR(S): Miele, Sergio; Bargiacchi, Enrica
PATENT ASSIGNEE(S): Agroqualita' S.R.L., Italy
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002059063	A1	20020801	WO 2001-IT42	20010126

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: WO 2001-IT42 20010126

AB A fertilizing compn. is provided which has an amending and structuring action on saline soils and alkali soils, comprising the synergistic assocn. of a calcium salt and a magnesium salt with an org. substance chosen from the group that consists of: (1) soil structuring agent; (2) chelating-acidifying substance; and (3) nutrient medium acting as "pabulum" for soil microorganisms.

IC ICM C05G003-04
ICS C05D011-00; C09K017-42
CC 19-5 (Fertilizers, Soils, and Plant Nutrition)
IT **Soils**
(alk.; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)
IT Polyphosphoric acids
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(ammonium salts; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)
IT Chelating agents
Soil amendments
Wheat flour
(component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)
IT Aminoplasts
Carboxylic acids, biological studies
Fertilizers
Gelatins, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)
IT **Soils**

(saline; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)

IT Humic acids
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(salts, sol.; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)

IT 9003-05-8, Polyacrylamide
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(anionic; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)

IT 50-21-5, Lactic acid, biological studies 50-99-7, Glucose, biological studies 57-48-7, Fructose, biological studies 57-50-1, Saccharose, biological studies 63-42-3, Lactose 77-92-9, Citric acid, biological studies 87-69-4, Tartaric acid, biological studies 110-15-6, Succinic acid, biological studies 110-94-1, Glutaric acid 328-50-7, .alpha.-Ketoglutaric acid 488-31-3, Trihydroxyglutaric acid 7439-95-4D, Magnesium, salts 7440-70-2D, Calcium, salts 7487-88-9, Magnesium sulfate, biological studies 7778-18-9, Calcium sulfate 8062-15-5, Lignosulfonate 9002-89-5, PVA 9005-53-2, Lignin, biological studies 9011-05-6, Urea-formaldehyde **polymer** 10124-37-5, Calcium nitrate 10377-60-3, Magnesium nitrate 39331-38-9, Iron lignosulfonate 52009-16-2, Calcium glutarate
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)

IT 9005-25-8, Corn starch, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(corn; component in fertilizing **compn**. for amending and structuring saline and alk. **soils**)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:556094 CAPLUS
DOCUMENT NUMBER: 137:93265
TITLE: Coated biosolid granules for use as **fertilizers** or for soil bioremediation
INVENTOR(S): Burnham, Jeffrey C.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002098982	A1	20020725	US 2002-51387	20020122

PRIORITY APPLN. INFO.: US 2001-262631P P 20010122
US 2001-272469P P 20010302

AB This invention relates to the prodn. and use of encapsulated and/or concentrically-constructed fertilizer or bioremediation granules such as, for example, granules of 0.5 mm to 10 mm in diam., constructed so that there are at least two components to the granule including a core with a surrounding capsule or a core with one or more concentric layers that are distinguishable from the core with respect to nutrient content, d., hardness, soly., compn., microbial content and permeability, as in permeability to odors or the permeability of nutrients that might volatilize to the atm. or leach into the soil. The basic idea was to

create a method for manufg. and using fertilizer granules, which incorporate multiple concentric layers or a core plus an encapsulating outer layer.

IC ICM A01N025-28
ICS A01N025-00; A01N063-00; A01N025-12
NCL 504359000
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
ST coated biosolid granule **fertilizer** soil bioremediation
IT Soil reclamation
(biol.; coated biosolid granules for use as **fertilizers** or for soil bioremediation)
IT Wastewater **treatment** sludge
(biosolids; coated biosolid granules for use as **fertilizers** or for **soil** bioremediation)
IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(coated biosolid granules for use as **fertilizers** or for soil bioremediation)
IT Grains (particles)
(granules; coated biosolid granules for use as **fertilizers** or for soil bioremediation)
IT **Polymers**, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(modified; coated granules contg. biosolids and)

L22 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:403756 CAPLUS
DOCUMENT NUMBER: 136:402555
TITLE: Small particle polyacrylamide for **soil conditioning**
INVENTOR(S): Arnold, Charles A.; Wallace, Arthur
PATENT ASSIGNEE(S): Soil Enhancement Technologies LLC, USA
SOURCE: U.S., 24 pp., Cont.-in-part of U.S. Ser. No. 290,484.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6395051	B1	20020528	US 1999-356271	19990716
WO 2001005878	A1	20010125	WO 2000-US19251	20000714
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1203048	A1	20020508	EP 2000-947376	20000714
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
US 2002095965	A1	20020725	US 2001-843608	20010426

PRIORITY APPLN. INFO.: US 1997-897015 B1 19970718
US 1998-93269P P 19980717
US 1999-290484 A2 19990412
US 1999-290483 A1 19990412

US 1999-356271 A 19990716
WO 2000-US19251 W 20000714
US 2000-694708 A2 20001023

AB A method of producing an aq. soln. of water-sol. polyacrylamide (PAM) with a concn. of at least about 5 g per L includes the steps of providing a monovalent or divalent cation salt soln., and preferably a Ca salt soln., and adding water-sol. PAM particles to the salt soln. such that the PAM particles are essentially all dissolved within about 10 s. The PAM particles are characterized by a particle size that is about -100 mesh and consisting essentially of mols. having a mol. wt. of at least about 15 million a.u. Preferably, the small PAM particles are produced by a mill that produces bulk quantities of small dry, flowable PAM particles from larger com. grade particles. Small PAM particles produced in such a mill are essentially all sol. in plain water within about 10 s. After soln., the polymer conc. can be dild. with water to make stock solns. of the polymer for some purposes. For other purposes the conc. can be injected directly into **irrigation** systems. Effectiveness of the water-sol. polyacrylamide as a soil conditioner is considerably increased by co-use with a Ca salt, gypsum, fertilizer salts, or a combination of these salts, in addn. to the increased ease of making solns.

IC ICM C08L039-00
NCL 071027000
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 19
ST polyacrylamide small particles **soil conditioner**
IT Salts, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(calcium salts; **soil conditioner compn.** contg. small particle polyacrylamide)
IT Size reduction
Soil amendments
(**soil conditioner compn.** contg. small particle polyacrylamide)
IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(**soil conditioner compn.** contg. small particle polyacrylamide)
IT 10043-52-4, Calcium chloride, biological studies 10124-37-5, Calcium nitrate 10124-41-1, Calcium thiosulfate 13397-24-5, Gypsum, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(**soil conditioner compn.** contg. small particle polyacrylamide)
IT 9003-05-8, Acrylamide **polymer**
RL: AGR (Agricultural use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(**soil conditioner compn.** contg. small particle polyacrylamide)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:368433 CAPLUS
DOCUMENT NUMBER: 136:369160
TITLE: **Soil** improving and fertilizing **composition**
INVENTOR(S): Van der Merwe, Pieter Gideo
PATENT ASSIGNEE(S): Aquasoil Limited, Virgin I. (Brit.)
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002038522	A2	20020516	WO 2001-ZA145	20010914
W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002013521	A5	20020521	AU 2002-13521	20010914
CN 1353163	A	20020612	CN 2001-137837	20011108

PRIORITY APPLN. INFO.: ZA 2000-6460 A 20001109
WO 2001-ZA145 W 20010914

AB The invention provides a process for prepg. a soil improving and fertilizing compn. from fertilizer and crosslinked copolymer, the process including imparting an elec. charge to at least one of said copolymer and the fertilizer and bringing said copolymer and fertilizer into intimate contact with each other. The fertilizer and crosslinked copolymer are believed to be mech. fused to form the compn. The invention extends to a compn. and to an agricultural or horticultural method using the compn.

IC ICM C05F015-00
ICS C05G003-04

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST **soil** amendment fertilizer **compn**

IT Electric charge
(in manuf. of **soil** amendment and fertilizer **compn**.)

IT **Soil** amendments
(**soil** amendment and fertilizer **compn**.)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(**soil** amendment and fertilizer **compn**.)

IT 31212-13-2, Potassium acrylate-acrylamide **copolymer**
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinked; **soil** amendment and fertilizer **compn**. contg.)

IT 57-13-6, Urea, biological studies 7487-88-9, Magnesium sulfate, biological studies 7631-95-0, Sodium molybdate 7722-76-1, Monoammonium phosphate 7757-79-1, Potassium nitrate, biological studies 7778-80-5, Potassium sulfate, biological studies 10043-35-3, Boric acid, biological studies 12519-36-7, Zinc EDTA 15275-07-7, Iron EDTA 51395-10-9, Copper EDTA 55448-20-9, Manganese EDTA
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(**soil** amendment and fertilizer **compn**. contg.)

IT 158254-60-5, Stockosorb
RL: MOA (Modifier or additive use); USES (Uses)
(**soil** amendment and fertilizer **compn**. contg.)

L22 ANSWER 5 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:142958 CAPLUS
DOCUMENT NUMBER: 136:188117
TITLE: Cementitious **compositions** and method for

soil slope **stabilization** using bio-capsules with shotcrete

INVENTOR(S): Lo, Kwong Cheung
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014612	A1	20020221	WO 2001-CN1227	20010816

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002013762	A5	20020225	AU 2002-13762	20010816

PRIORITY APPLN. INFO.:
CA 2000-2317216 A 20000816
WO 2001-CN1227 W 20010816

AB The method of stabilizing an inclined soil surface against failure and erosion comprises applying over the surface a layer including (a) a structural matrix for retaining the surface, and (b) a growth compn. dispersed in the matrix, the growth compn. capable of supporting vegetative growth. The applied layer contains cement, aggregates, and org. fibers, and the structural matrix contains concrete, esp. shotcrete, and a water reducing polymer. The shotcrete contains cement, aggregates, water, and such admixts. as silica fume, fly ash, superplasticizer, and org. fibers, esp. shredded paper or rice husk. The growth compn. includes bio-capsules having a diam. of 2-30 mm contg. gtoreq.1 of a clayey slit, org. and inorg. fertilizers (e.g., nitrogen fertilizer, potassium fertilizer, or peat moss), water, a binder, grass seeds, bentonite as a swelling agent, and soil. The binder is selected from tree gum and CM-cellulose fibers or gel.

IC ICM E02D017-20
ICS C04B028-04

CC 58-5 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 19

ST **soil stabilization** shotcrete mortar cement fiber grass **fertilizer**

IT Fibers
RL: MOA (Modifier or additive use); USES (Uses)
(CM cellulose, binder; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Gum tree
(binder; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Sphagnum
(bio-capsule component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Clays, uses
RL: MOA (Modifier or additive use); USES (Uses)

(clayey slit; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Paper
(fibers, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Ashes (residues)
(fly, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Rice (Oryza sativa)
(husk, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT **Soil stabilization**
(inclined **soil** surface; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT **Fertilizers**
RL: MOA (Modifier or additive use); USES (Uses)
(nitrogen, bio-capsule component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Cement
(portland, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT **Fertilizers**
RL: MOA (Modifier or additive use); USES (Uses)
(potassium, bio-capsule component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Chaff
(rice husk, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Poaceae
(seeds, bio-capsule component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Mortar
(shotcrete, contg. bio-capsules; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Plasticizers
(superplasticizers, **polymer**, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT Bentonite, uses
RL: MOA (Modifier or additive use); USES (Uses)
(swelling agent; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

IT 7631-86-9, Silica fume, uses
RL: MOA (Modifier or additive use); USES (Uses)
(amorphous, fume, shotcrete component; cementitious **compns**. and method for **soil** slope **stabilization** using bio-capsules with shotcrete)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS

L22 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:2825 CAPLUS
DOCUMENT NUMBER: 136:37016
TITLE: Peat composite bowl for growing plant and its use
INVENTOR(S): Meng, Xianmin; Cui, Baoshan
PATENT ASSIGNEE(S): Changchun Inst. of Geography, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1301483	A	20010704	CN 1999-127493	19991230

PRIORITY APPLN. INFO.: CN 1999-127493 19991230

AB The raw material of the bowl is composed of peat 93-97, composite nutrient compd. 0.9-4, puffing agent 0.3-1.5, and acid regulator 0.8-3%. The peat contains org. substance above 50, cellulose above 35, and water 28-39%. The nutrient compd. is selected from condensation compd. of urea and formaldehyde, phosphate, potassium and trace element; the acid regulator from CaCO3 and dolomite; and the puffing agent from vermiculite, CaCO3, or vermiculite/polyacrylamide. The bowl can be used to plant vegetable, tree seedling and flower.

IC ICM A01G031-00
ICS A01G009-10; C05G003-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT Cucumber (Cucumis sativus)
Eggplant (Solanum melongena)
Flower
Organic matter
Peat
Potato (Solanum tuberosum)
Soil substitutes
(Peat **composite** bowl for growing plant and its use)

IT Aminoplasts
Fertilizers
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(Peat composite bowl for growing plant and its use)

IT 133-32-4, Indolyl-3-butyric acid 471-34-1, Calcium carbonate (CaCO3), biological studies 1318-00-9, Vermiculite 6484-52-2, Ammonium nitrate, biological studies 7720-78-7, Ferrous sulfate 7778-77-0, Potassium dihydrogen phosphate 9003-05-8, Polyacrylamide 9004-34-6, Cellulose, biological studies 9011-05-6, Urea, **polymer** with formaldehyde 16389-88-1, Dolomite, biological studies 26445-01-2, Naphthylacetic acid
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(Peat composite bowl for growing plant and its use)

L22 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:484043 CAPLUS
DOCUMENT NUMBER: 135:45719
TITLE: Preparation of chelating water-retaining organic and inorganic composite fertilizer with multiple trace elements
INVENTOR(S): Xie, Fanmiao; Cai, Yongping
PATENT ASSIGNEE(S): Tiandi Xinshengli Biological Technology Co., Ltd.,

SOURCE: Beijing, Peop. Rep. China
Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1280112	A	20010117	CN 2000-123421	20000816

PRIORITY APPLN. INFO.: CN 2000-123421 20000816

AB The raw material of the fertilizer comprises org. material 40-60, inorg. material 40-50, org. chelated trace element 4-10%, and addnl. drought-resisting agent to 100%. The process comprises allowing to ferment org. material from one or more of sludge, peat, and org. waste; pulverizing inorg. material, mixing, prilling, and cooling. The chelated trace element is selected from EDTA-Ca, EDTA-Mg, EDTA-Cu, EDTA-Mn, EDTA-Mo, EDTA-Zn or DTPA-Fe; and the heavy metal-removing agent from one or more of fly ash, org. chelating compd. and ground phosphorite; and the drought-resisting agent from starch grafted polymer and polyacrylamide polymer.

IC ICM C05G003-00
ICS C05G003-04; C09K017-18
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(calcium-magnesium-phosphorus; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT **Fertilizers**
RL: AGR (Agricultural use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)
(multinutrient; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(nitrogen; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(nitrophosphate; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(phosphorus; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(potassium; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

IT Antibacterial agents
Deodorants
Fermentation
Peat
Sludges
Soil amendments
Vegetable materials
(prepn. of chelating water-retaining org. and inorg. **composite** fertilizer with multiple trace elements)

IT **Polymers**, biological studies

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(starch grafted; prepn. of chelating water-retaining org. and inorg. composite fertilizer with multiple trace elements)

L22 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:199367 CAPLUS
DOCUMENT NUMBER: 132:223421
TITLE: Biodegradable **polymer compositions** containing coal ash for fertilizers and **soil** modifiers
INVENTOR(S): Tanaka, Suminori; Tanaka, Issaku; Miyanohara, Yasushi
PATENT ASSIGNEE(S): Ohkura Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000086913	A2	20000328	JP 1998-257769	19980911

PRIORITY APPLN. INFO.: JP 1998-257769 19980911

AB The compns. comprise 99-20% biodegradable polymers and 1-80% coal ash. A compn. contg. 50% poly(butylene succinate-adipate) (I) and 50% fly ash was pelletized to give pellets. Soil contg. 20 kg I pellets per m2 soil showed potato growing yield 4.3 kg/m2 soil.

IC ICM C08L101-16
ICS C08K003-24; C08L067-00

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 19

ST biodegradable **polymer** coal ash mixt fertilizer; polybutylene succinate adipate fly ash mixt fertilizer; soil modifier biodegradable **polymer** coal ash mixt

IT Biodegradable materials
Soil amendments
(biodegradable **polymer compns**. contg. coal ash for fertilizers and **soil** modifiers)

IT **Polymers**, uses
RL: AGR (Agricultural use); POF (Polymer in formulation); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)
(biodegradable **polymer compns**. contg. coal ash for fertilizers and **soil** modifiers)

IT **Fertilizers**
RL: AGR (Agricultural use); PRP (Properties); BIOL (Biological study); USES (Uses)
(biodegradable **polymer compns**. contg. coal ash for fertilizers and **soil** modifiers)

IT Ashes (residues)
(coal; biodegradable **polymer compns**. contg. coal ash for fertilizers and **soil** modifiers)

IT Ashes (residues)
(fly; biodegradable **polymer compns**. contg. coal ash for fertilizers and **soil** modifiers)

IT 67423-06-7, Adipic acid-butylene glycol-succinic acid **copolymer**
RL: AGR (Agricultural use); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); BIOL (Biological study); PROC (Process); USES (Uses)
(biodegradable **polymer compns**. contg. coal ash for

fertilizers and **soil** modifiers)

L22 ANSWER 9 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:117127 CAPLUS
DOCUMENT NUMBER: 132:155688
TITLE: **Soil treatment compositions** and their use
INVENTOR(S): Rose, Simon Alexander Hanson; Turner, Jayne Anne
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Water Treatments Limited, UK
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000008114	A1	20000217	WO 1999-EP5126	19990719
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9956183	A1	20000228	AU 1999-56183	19990719
AU 744421	B2	20020221		
EP 1105443	A1	20010613	EP 1999-942789	19990719
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2001018047	A1	20010830	US 2001-838430	20010419
US 2002136749	A1	20020926	US 2002-57423	20020124

PRIORITY APPLN. INFO.:
GB 1998-16784 A 19980731
WO 1999-EP5126 W 19990719
US 1999-361816 A3 19990727

AB The invention provides aq. soil treatment compns. comprising water and dissolved ionic water-sol. fertilizer in an amt. of .gtoreq.10 wt.% and dissolved water-sol. anionic polymer having .gtoreq.6 dL/g and ionic content .gtoreq.40 wt.%. Such concs. can have low viscosity and be pourable and be used as concs. for diln. in **irrigation** processes.

IC ICM C09K017-18
ICS C09K017-22; C05G003-00; C05G003-04; C05C009-00

CC 58-5 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 19

ST **soil stabilization fertilization treatment compn**

IT **Soil stabilization**
Soil stabilizing agents
(**soil treatment compns**. and their use)

IT **Fertilizers**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**soil treatment compns**. and their use)

IT 57-13-6, Urea, uses 6484-52-2, Ammonium nitrate, uses 7783-20-2, Ammonium sulfate, uses 12136-45-7, Potash, uses 15245-12-2, Calcium ammonium nitrate **25085-02-3**, **Acrylamide**-sodium

acrylate copolymer 40623-73-2, Acrylamide-AMPS **copolymer** 144503-03-7
RL: BUU (Biological use, unclassified); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)
(**soil treatment compns**. and their use)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:751834 CAPLUS
DOCUMENT NUMBER: 131:350779
TITLE: **Soil treatment** agents containing **polymers** and their uses
INVENTOR(S): Tsukiyama, Fumitoshi; Tachibana, Yoshinobu
PATENT ASSIGNEE(S): Showa Highpolymer Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11323331	A2	19991126	JP 1998-100393	19980327
PRIORITY APPLN. INFO.:			JP 1998-82482	19980313

AB The agents contain water-sol. copolymers prepd. by (1) emulsion polymg. a monomer mixt. contg. 2-50 parts (A) unsatd. carboxylic acids and 50-98 parts copolymerizable monomers in H2O and (2) neutralizing the resulting copolymer dispersion with an aq. alkali soln. The agents are used for amendment of soil or prevention of soil erosion. The agents are also used for greening together with fertilizers, etc. The agents show low viscosity in spite of the high mol. wt., can form water-resistant film, and are not gelled when frozen. Et acrylate, Me methacrylate, and methacrylic acid were polymd. in H2O contg. iso-Pr alc. and aq. polyacrylamide soln. (protective colloid), and further polymd. with N-methylolacrylamide to give a water-sol. polymer soln. A mixt. of the polymer soln., Kentucky blue grass seeds, white clover seeds, fertilizers, and fiber was s prated over slope. Germination was obsd. after 4 days and covering of the slope with grass was completed after 3 mo without soil erosion and seed elution by wind and rain.

IC ICM C09K017-18
ICS C08F008-44; C08F246-00; C09K101-00
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
Section cross-reference(s): 38
ST water sol unsatd carboxylic acid **copolymer** soil amendment; methacrylic acid alkyl acrylate **copolymer** soil erosion prevention; greening water sol unsatd carboxylic acid **copolymer**
IT Plant (Embryophyta)
Soil amendments
Soil erosion
(prepn. of water-sol. unsatd. carboxylic acid **copolymers** for amendment of soil, prevention of soil erosion, and greening)
IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(prepn. of water-sol. unsatd. carboxylic acid **copolymers** for amendment of soil, prevention of soil erosion, and greening)
IT 25133-97-5P, Ethyl acrylate-methacrylic acid-methyl methacrylate **copolymer** 25639-14-9P, Ethyl acrylate-methacrylic acid-methyl methacrylate-N-methylolacrylamide **copolymer**

RL: AGR (Agricultural use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of water-sol. unsatd. carboxylic acid **copolymers** for amendment of soil, prevention of soil erosion, and greening)

IT 9003-05-8, Polyacrylamide
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(protective colloid; prepn. of water-sol. unsatd. carboxylic acid **copolymers** for amendment of soil, prevention of soil erosion, and greening)

L22 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:728153 CAPLUS
DOCUMENT NUMBER: 131:322105
TITLE: Manufacture of cultivation soil from dewatered sludge cake of inorganic wastewater
INVENTOR(S): Kato, Nobuo; Nishimura, Hiroyuki; Abiko, Seiji
PATENT ASSIGNEE(S): Telnite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11315280	A2	19991116	JP 1998-122119	19980501

PRIORITY APPLN. INFO.: JP 1998-122119 19980501

AB The soil is manufd. by (1) mixing dewatered cake of inorg. sludge with water-sol. polymers, (2) classifying the mixt., (3) adding soil amendments such as bark compost, leaf mold, peat moss, etc., and optionally fertilizers to the mixt., and then (4) curing the mixt. Lime-based solidifying agents and/or CaO may be added after the addn. of water-sol. polymers and neutralization of pH may be performed before the curing process by contacting with air. Dewatered cake obtained from flocculation process for quarry wastewater was kneaded with guar gum and the mixt. was sieved to remove .ltoreq.1 mm and .gtoreq.10 mm particles,. The sieved product was cured indoors for 7 days and then mixed with bark compost to give plant cultivation soil. The soil was further mixed with complex fertilizer and Ca superphosphate and used for cultivation of komatsuna.

IC ICM C09K017-48
ICS C02F011-00; C09K101-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST inorg sludge dewatered cake water sol **polymer** cultivation soil; quarry wastewater dewatered sludge gum amendment cultivation soil

IT Leaf
Sawdust
(compost; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT Wastewater **treatment** sludge
(dewatered; manuf. of cultivation **soil** from dewatered sludge cake of inorg. wastewater, **soil** amendments, and optionally **fertilizers**)

IT Rice (Oryza sativa)
Rice (Oryza sativa)
(husk, compost; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT Compost

Gums and Mucilages
Recycling
Soil amendments
Sphagnum
(manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT **Fertilizers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT Mining
(quarry; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT Chaff
Chaff
(rice husk, compost; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT **Polymers**, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(water-sol.; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT 9004-32-4, Carboxymethyl cellulose
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(1400LC; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT **25085-02-3**, **Acrylamide**-sodium **acrylate copolymer**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(A 140; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT 9000-30-0, Guar gum 9004-34-6D, Cellulose, derivs., biological studies
9005-25-8, Starch, biological studies 9005-32-7, Alginic acid
9005-38-3, Sodium alginate
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

IT 1305-78-8, Calcium oxide, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(solidifying agent; manuf. of cultivation soil from dewatered sludge cake of inorg. wastewater, soil amendments, and optionally **fertilizers**)

L22 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1994:135984 CAPLUS
DOCUMENT NUMBER: 120:135984
TITLE: Physicochemical properties of a **polymer** complex based on lignosulfonates and urea-formaldehyde resin
AUTHOR(S): Krut'ko, N. P.; Vorob'eva, E. V.; Basalyga, I. I.
CORPORATE SOURCE: Inst. Obshch. Neorg. Khim., Minsk, Belarus
SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1993), 66(5), 1127-30
CODEN: ZPKHAB; ISSN: 0044-4618
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Reaction of PhOH-HCHO resin with Na lignosulfonate gave a polymer

complexes that were more effective as binders for KCl and phosphogypsum granules and as soil stabilization agents than individual components. Soln. rheol. properties and viscosity-temp. curves were compared for individual PhOH-HCHO and Na lignosulfonate and their complex.

CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 19

ST swelling lignosulfonate phenol formaldehyde complex; mech strength **fertilizer** granule lignosulfonate; rheol lignosulfonate phenol formaldehyde complex; pH lignosulfonate phenol formaldehyde complex; potassium chloride granule **polymer** binder; phosphogypsum granule lignosulfonate complex binder; soil structure lignosulfonate complex binder

IT **Soil stabilization**
(agents, phenol-formaldehyde resin-sodium lignosulfonate complex)

IT **Fertilizers**
RL: PRP (Properties)
(gypsum, granules, phenol-formaldehyde resin-sodium lignosulfonate complex as binder for)

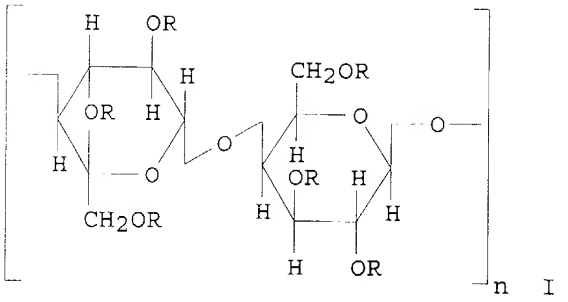
IT **Fertilizers**
RL: PRP (Properties)
(potassium chloride, granules, phenol-formaldehyde resin-sodium lignosulfonate complex as binder for)

IT 8061-51-6D, Lignosulfonic acid, sodium salt, phenol-formaldehyde resin complexes 9011-05-6D, Formaldehyde-urea **copolymer**, sodium lignosulfonate complexes
RL: PROC (Process)
(rheol. properties and applications of, as **fertilizer** granule binder and **soil stabilization** agent)

L22 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1991:655140 CAPLUS
DOCUMENT NUMBER: 115:255140
TITLE: Water-imbibing tablet, briquette and capsule containing growth-enhancing media and water-retentive **copolymer** used in forestry or agriculture
INVENTOR(S): Turpin, Kenneth A.
PATENT ASSIGNEE(S): Can.
SOURCE: Can. Pat. Appl., 11 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2000640	AA	19910413	CA 1989-2000640	19891013

PRIORITY APPLN. INFO.: CA 1989-2000640 19891013
GI



AB Water-imbibing tablets comprise plant enhancement agents, such as fertilizers, sugars, cytokinins, IAA, and gibberellic acid, and biodegradable water-retentive polymers, such as I (R and n not defined) and crosslinked polyacrylamide copolymers. A tablet contained I 10, carnauba wax 10, (NH4)H2PO4 5, potash 10, melogel starch 20, Mg stearate 2, and talc 3%.

IC ICM C05G003-00
ICS C05G005-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT Actinomycetes
Bacillus subtilis
Bacillus thuringiensis
Dispersing agents
Pseudomonas
Repellents
Rhizobium
Soil amendments
Wetting agents
Amino acids, biological studies
Carbohydrates and Sugars, biological studies
Enzymes
Fertilizers
Perlite
RL: BIOL (Biological study)
(tableted plant growth-enhancing **compn**. contg.)

IT 56-65-5, Adenosine triphosphate, biological studies 77-06-5, Gibberellic acid 86-87-3, Naphthalene acetic acid 121-75-5 133-06-2, Captan 133-32-4, Indolebutyric acid 137-26-8, Thiram 759-94-4 1318-00-9, Vermiculite (Mg0.33[Mg2-3(Al0-1Fe0-1)0-1](Si2.33-3.33Al0.67-1.67)(OH)2O10.4H2O) 1563-66-2, Carbofuran 3734-33-6D, derivs. 7439-95-4, Magnesium, biological studies 7440-70-2, Calcium, biological studies 7758-98-7, Sulfuric acid copper(2+) salt (1:1), biological studies 9003-05-8D, Polyacrylamide, **copolymers**, crosslinked 9004-34-6, Cellulose, biological studies 17804-35-2, Benomyl 23950-58-5, Pronamide 30560-19-1, Acephate 32536-43-9, Indole acetic acid 57837-19-1, Metalaxyl
RL: BIOL (Biological study)
(tableted plant growth-enhancing compn. contg.)

L22 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1989:477043 CAPLUS
DOCUMENT NUMBER: 111:77043
TITLE: Fertilizers and soil amendments containing resins for rapid disintegration in water and in soil
INVENTOR(S): Urano, Teruo; Miyaji, Hiroshi

PATENT ASSIGNEE(S): Murakashi Sekkai Kogyo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63230587	A2	19880927	JP 1987-61361	19870318

PRIORITY APPLN. INFO.: JP 1987-61361 19870318

AB Fertilizers and alk. materials, which are insol. or sparingly sol. in water, are made into granules with water-absorbing resin powders. A mixt. of magnesia, CaCO3 fertilizer and P-contg. furnace slag was pulverized to particles of ltoreq.0.160 mm size, and 100 parts of the powder was mixed with 0.5 part poly(vinyl alc.)-maleic acid ester copolymer and made into granules. The fertilizer compn. contg. the polymer was disintegrated rapidly in water as compared to the control contg. no polymer.

IC ICM C05G003-00
ICA B01J002-28
ICI C05G003-00, C05B013-02, C05D003-00, C05D005-00, C05D009-00
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
ST **polymer** fertilizer granule; amendment soil **polymer**
IT **Polymers**, biological studies
RL: BIOL (Biological study)
(fertilizers and soil amendments contg., for rapid disintegration in soils)
IT **Soil** amendments
Fertilizers
RL: BIOL (Biological study)
(granular **compns**. contg. water-absorbing **polymers** and, for rapid disintegration in **soils**)
IT 110-16-7D, Maleic acid, esters, **polymers** with vinyl alc.
557-75-5D, Vinyl alcohol, **polymers** with maleic acid esters
RL: BIOL (Biological study)
(fertilizers and soil amendments contg., for rapid disintegration in soils)

L22 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1983:574837 CAPLUS
DOCUMENT NUMBER: 99:174837
TITLE: Soil amendment production
PATENT ASSIGNEE(S): Nitto Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Tokkyo Koho, 6 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58028313	B4	19830615	JP 1974-144080	19741217

PRIORITY APPLN. INFO.: JP 1974-144080 19741217

AB A granular soil amendment is formulated from acrylamide polymers, silicic acid or silicates and one or more of phosphates, nitrates, and sulfates, or free forms , of urea, guanylurea, guanidine, dicyanidiamide, and amidinothiourea. The product markedly improves aggregation of clayey soil. Thus, a compn. contg. powd. Na salt of acrylamide-acrylic acid

copolymer [25987-30-8] (acrylamide/acrylic acid ratio 85:15, av. mol. wt. 3,000,000) 7, Na2CO3 0.4, amidinothiourea 5, burnt diatomaceous earth 90, and water 50 parts was granulated. The product had a high aggregation rate for kaolin.
IC C09K017-00
ICA C05C007-00; C05C009-00
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
ST amendment fertilizer **compn soil**
IT **Soil** amendments
Fertilizers
RL: BIOL (Biological study)
(manuf. of, acrylamide **polymers** and ureas and thioureas in)
IT 57-13-6, uses and miscellaneous 420-04-2 461-58-5 497-19-8, biological studies 1763-07-1 2114-02-5 17675-60-4
RL: USES (Uses)
(fertilizer-soil amendment contg. acrylamide-acrylic acid **copolymers** and)

L22 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1982:471465 CAPLUS
DOCUMENT NUMBER: 97:71465
TITLE: Container for plant growth
INVENTOR(S): Bellamy, Denis
PATENT ASSIGNEE(S): University College Cardiff Consultants Ltd., UK
SOURCE: Brit. UK Pat. Appl., 4 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2088184	A	19820609	GB 1980-37070	19801119
GB 2094603	A	19820922	GB 1981-34883	19811119
GB 2094603	B2	19840905		

PRIORITY APPLN. INFO.: GB 1980-37070 19801119
AB The title container consists of a bag contg. a mixt. of a resilient hydrophobic polymeric foam crumb (25-95%) and a solid hydrophilic particulate material (5-75%) as a growth medium. The solid hydrophilic particles are attached to the surface of the pieces of the foam crumb. The foam crumb pieces are of a size passing through a sieve of mesh 3-19 mm and consist of a polyether or polyester polyurethane or other plastic materials. The cell size of the foam crumb is 0.3-1 mm. The hydrophilic material consists of fly ash, perlite, Fuller's earth, peat, bark, etc. The container contains also a wetting agent at 0.03-0.1% of the dry wt. of the bog mixt. Thus, the medium consists of polyurethane foam crumb (6-mm sieve b) 0.9, fly ash 1.5, perlite 0.3, fertilizer 0.5, powd. bark 0.7, H2O 1.8, and wetting agent 0.002 kg. The wetting agent is added to the water, the water is mech. dispersed in the foam crumb, the hydrophic materials and fertilizer are then added gradually into the wetted foam crumb and mixed in a revolving drum, and the final mixt. is packed into plastic bags of 950 .times. 410 mm size.
IC A01G009-02; C05D009-00; C05F011-00
CC 19-3 (Fertilizers, Soils, and Plant Nutrition)
IT Urethane **polymers**, biological studies
RL: BIOL (Biological study)
(foam crumb, soil substrate for plant growing in containers contg.)
IT Bark
Wetting agents

Fertilizers
Perlite
Plastics, cellular
RL: BIOL (Biological study)
(soil substrate for plant growing in containers contg.)
IT **Soils**
(substrate, for plastic containers for plant growing, **compn.** of)

L22 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1982:109656 CAPLUS
DOCUMENT NUMBER: 96:109656
TITLE: Night soil deodorization
PATENT ASSIGNEE(S): Nakazono, Shuzo, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56151054	A2	19811121	JP 1980-55952	19800425
FR 2488817	A1	19820226	FR 1980-18178	19800820
FR 2488817	B1	19840217		

PRIORITY APPLN. INFO.: JP 1980-55952 19800425
AB Night soil is dumped in a low pressure tank contg. a heat-treated waste fat, to polymerize indoles [120-72-9] and skatole [83-34-1] in the night soil with free fatty acids. Thus, a sardine fat was heated to .apprx.95.degree., then night soil was pumped into the tank and heated at 135-40.degree. and 160 torr. The product can be disposed of and used as a fertilizer or animal feed.
IC A61L011-00
CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 17, 19
IT Sardine
(fat, for **polymg**. with indoles and skatole in night soil)
IT Feed
(manuf. of, from night **soil** after **treatment** with fatty acid)
IT **Fertilizers**
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, from night **soil** after **treatment** with fatty acid)
IT Wastewater **treatment**
(deodorization, of night **soil**, fatty acid **treatment** in)
IT 83-34-1 120-72-9D, compds.
RL: RCT (Reactant); RACT (Reactant or reagent)
(**polymn**. of, with fatty acids, night soil deodorization by)

L22 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1980:445156 CAPLUS
DOCUMENT NUMBER: 93:45156
TITLE: Agrochemical composition
INVENTOR(S): Wagner, Kuno; Niggemann, Johannes; Findeisen, Kurt; Scheinpflug, Hans
PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.
SOURCE: Eur. Pat. Appl., 201 pp.

CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 8685	A1	19800319	EP 1979-102816	19790806
EP 8685	B1	19811202		
R: AT, BE, CH, DE, FR, GB, IT, NL, SE				
DE 2836155	A1	19800410	DE 1978-2836155	19780818
US 4283219	A	19810811	US 1979-63602	19790803
AU 7949861	A1	19800228	AU 1979-49861	19790813
CA 1120281	A1	19820323	CA 1979-333895	19790816
DK 7903447	A	19800219	DK 1979-3447	19790817
JP 55037491	A2	19800315	JP 1979-104194	19790817
BR 7905322	A	19800715	BR 1979-5322	19790817
ZA 7904351	A	19800924	ZA 1979-4351	19790817
ES 483449	A1	19801201	ES 1979-483449	19790817

PRIORITY APPLN. INFO.: DE 1978-2836155 19780818

AB Fertilizers and soil conditioner contg. at least 1 product of azulmic acid [26746-21-4] stabilized by condensation products with a 0.5-55% content of ionic groups of the formula (R)C2NH2O2, where R is H, NH4, a quaternary org. C base, etc., and a 0.5-15% content of a -CHNH2 formed by decarboxylation reactions, an addn. salt, and/or surfactants were manufd. Thus, 3 products of azulmic acids stabilized by formaldehyde [50-00-0] and aminoplast condensation products with urea [57-13-6] and isobutyraldehyde [78-84-2] with polyalkylidenepolyurea contents of 33.4, 43, and 55% and a P content of 3.7, 2.5, and 2.6% (from bound H3PO4), resp., and an azulmic acid stabilized with hexamethylenetetramine [100-97-0] contg. 39.9% N increased the plant growth in pot expts. Examples of azulmic acid prepn. in presence of various agents and treating azulmic acid with reagents reacting in absence of H2O are given.

IC C05C011-00; C09K017-00
CC 19-5 (Fertilizers, Soils, and Plant Nutrition)
ST azulmic acid reaction product **fertilizer**
IT Soil amendments
Fertilizers
RL: BIOL (Biological study)
(azulmic acid-contg. products as)
IT Aldehydes, compounds
Ketones, compounds
RL: BIOL (Biological study)
(condensation product with azulmic acid, as **fertilizers** and soil conditioners)
IT 67-47-0D, condensation products with azulmic acid 68-12-2D, condensation products with azulmic acid 75-07-0D, condensation products with azulmic acid 75-44-5D, reaction products with azulmic acid 77-78-1D, reaction products with azulmic acid 80-62-6D, condensation products with azulmic acid 90-02-8D, condensation products with azulmic acid 96-49-1D, reaction products with azulmic acid 98-01-1D, condensation products with azulmic acid 100-42-5D, condensation product with acrylnitrile and azulmic acid 105-60-2D, reaction products with azulmic acid 107-02-8D, condensation products with azulmic acid 107-13-1D, condensation products with azulmic acid and styrol 107-22-2D, condensation products with azulmic acid 108-05-4D, condensation products with azulmic acid 108-24-7D, reaction products with azulmic acid 123-38-6D, condensation products with azulmic acid 502-44-3D, reaction products with azulmic acid 597-31-9D, condensation products with azulmic acid 645-05-6D,

condensation products with azulmic acid 822-06-0D, reaction products with azulmic acid 4891-66-1D, reaction products with azulmic acid 5395-50-6D, condensation products with azulmic acid 74218-67-0D, condensation products with azulmic acid
RL: BIOL (Biological study)
(as **fertilizers** and soil conditioners)

IT 301-04-2 1344-13-4 3251-23-8 4170-30-3 7758-94-3 7758-98-7, uses and miscellaneous 7761-88-8, uses and miscellaneous 7773-01-5 7785-21-9 7785-87-7 10045-94-0 10099-74-8 10361-44-1 7646-79-9, uses and miscellaneous 7646-85-7, uses and miscellaneous 7718-54-9, uses and miscellaneous 7720-78-7
RL: BIOL (Biological study)
(azulmic acid condensation product contg., as **fertilizer** and soil conditioner)

IT 78-84-2 50-00-0, uses and miscellaneous 57-13-6, uses and miscellaneous 100-97-0, uses and miscellaneous
RL: BIOL (Biological study)
(azulmic acid **stabilized** by, as **fertilizer** and **soil** conditioner)

IT 108-94-1, biological studies
RL: BIOL (Biological study)
(condensation products with azulmic acid, as **fertilizers** and soil conditioners)

IT 136-84-5 140-95-4D, condensation product with azulmic acid 584-08-7D, condensation product with azulmic acid 1000-82-4D, condensation product with azulmic acid 1000-83-5 1017-56-7 7664-38-2D, condensation product with azulmic acid 7697-37-2D, condensation product with azulmic acid
RL: BIOL (Biological study)
(**fertilizers** and soil conditioners contg.)

IT 590-28-3 7664-41-7, uses and miscellaneous
RL: BIOL (Biological study)
(hydrocyanic acid **polymn**. in presence of, in azulmic acid manuf.)

IT 74-90-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**polymn**. of, in azulmic acid manuf.)

IT 26746-21-4
RL: BIOL (Biological study)
(products contg. **stabilized**, as **fertilizers** and **soil** conditioners)

L22 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1979:522881 CAPLUS
DOCUMENT NUMBER: 91:122881
TITLE: Sludge-resin **composites** as fertilizers and **soil** conditioners
INVENTOR(S): Kawamura, Toshitsugu
PATENT ASSIGNEE(S): Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54069573	A2	19790604	JP 1977-136924	19771114

PRIORITY APPLN. INFO.: JP 1977-136924 19771114

AB Industrial sludges are mixed with a polar group-contg. copolymer soln. to form a water-insol. resin-sludge composite, then solidified to form porous compacts and dried. Optionally the sludge-resin soln. mixt. is formed to a powder, then used as a soil conditioner or fertilizer. Thus, spent activated C sludge from a brewery was mixed with an aq. soln. contg. polar olefinic copolymer, then the ppt. was dried, and used as a slow-release fertilizer.
IC B01J001-00; C02C003-00
CC 19-5 (Fertilizers, Soils, and Plant Nutrition)
ST sludge olefin **polymer** composite fertilizer; activated carbon sludge resin fertilizer
IT Alkenes, **polymers**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(in fertilizer manuf.)
IT **Soil** amendments
Fertilizers
RL: BIOL (Biological study)
(sludge-resin **compn.** as, manuf. of)
IT **Polymers**, biological studies
(polar group-contg., in fertilizer manuf.)

L22 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1976:576160 CAPLUS
DOCUMENT NUMBER: 85:176160
TITLE: **Soil treatment compositions**
INVENTOR(S): Bishop, Richard T.
PATENT ASSIGNEE(S): Revertex Ltd., S. Afr.
SOURCE: S. African, 15 pp.
CODEN: SFXXAB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ZA 7408240	A	19760225	ZA 1974-8240	19741230
US 4051630	A	19771004	US 1975-638166	19751205
CA 1076382	A1	19800429	CA 1975-241346	19751209
AU 7587602	A1	19770623	AU 1975-87602	19751216

PRIORITY APPLN. INFO.: ZA 1974-8240 A 19741230
ZA 1975-4296 A 19750704

AB The compns. consist of a polymer applied as an emulsion, suspended, or in soln. to the sand or soil, mixed and then dried. The polymer is applied to provide 0.01-0.5 parts polymer/100 parts sand or soil. The treated soil particles are non wettable and form a barrier to moisture while allowing the penetration of plant roots and the passage of gases. Thus furrows were treated with a Me methacrylate 2-ethylhexyl acrylate copolymer [25265-15-0] emulsion contg. 0.2% polymer and air dried. Sugarcane shoot yield from the polymer-treated furrow increased by 37-49% over no treatment. A styrene 2-ethylhexyl acrylate copolymer [25153-46-2] dextrin [9004-53-9] blend (40,60) reduced fertilizer losses by up to 54% from sand-polymer-fertilizer briquettes.
IC A01G
CC 19-5 (Fertilizers, Soils, and Plant Nutrition)
ST **polymer soil treatment compn**
IT Fatty acids, esters
RL: BIOL (Biological study)
(branched, vinyl esters, **copolymer** with vinylacetate,

fertilizer leaching from sand prevention by)
IT **Fertilizers**
RL: RCT (Reactant); RACT (Reactant or reagent)
(leaching of, from sand, **polymers** prevention of)
IT **Soil** amendments
(**polymers** as)
IT Acetic acid ethenyl ester, **copolymer** with vinyl esters of versatic acids
RL: BIOL (Biological study)
(**fertilizer** leaching from sand prevention by)
IT 25153-46-2
RL: BIOL (Biological study)
(dextrin compn. with, **fertilizer** leaching prevention by)
IT 9004-53-9
RL: BIOL (Biological study)
(styrene ethylhexyl acrylate **copolymer** blend with, **fertilizer** leaching prevention by)

L22 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1970:20947 CAPLUS
DOCUMENT NUMBER: 72:20947
TITLE: Use of **polymers** for soil crumbling and melioration
AUTHOR(S): Kachinskii, N. A.; Mosolova, A. I.; Taimurazova, L. Kh.
CORPORATE SOURCE: Moskauer Univ., Moscow, USSR
SOURCE: Trans., Int. Congr. Soil Sci., 9th (1968), Volume 1, 521-33. Editor(s): Holmes, J. W. Amer. Elsevier Publ. Co., Inc.: New York, N. Y.
CODEN: 21SPA4
DOCUMENT TYPE: Conference
LANGUAGE: German
AB The effects of different polymers on structure formation, phys. properties, N status, pH, microflora, and crop yields were studied. Polyacrylonitrile (I), polyacrylamide, hydrolyzed I (GIPAN), western bentonite (K4), NH4 lignosulfonate (AK-1), Ca lignosulfonate (AK-7), and other polymers (Vama, Verdickung AN, Separan) were tested on sod podzol and chestnut soils and on different minerals. Chem. residual valence bonds on external surfaces of colloidal particles, H+-OH- bonds, and phys. bonds involving van der Waal's forces were for med by interaction of the polymers with the minerals and soils. Polymer levels of 0.05-0.10% of soil wt. gave the greatest aggregative effect. The aggregative effect was stronger on soils with natural but H2O-unstable structure than on structureless soils. The use of polymers with K-P fertilizers increased yields of several food crops on sod podzol and chestnut soils by 42-670%, while the use of N-K-P fertilizers alone gave only a 38% increase.
CC 20 (Fertilizers, Soils, and Plant Nutrition)
ST **polymers** soil amendments; soil amendments **polymers**; amendments soil **polymers**; aggregation soils **polymers**
IT Soils
(conditioners for, **polymers** as)
IT **Fertilizers**
RL: BIOL (Biological study)
(phosphorus and potassium, **soil stabilizing polymers** interactions with, in field crops)

L22 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1969:107175 CAPLUS
DOCUMENT NUMBER: 70:107175
TITLE: Viscous aqueous compositions from **polymers**

containing N-morpholinone and **polymers** containing sulfo or carboxyl groups or their salts

INVENTOR(S): Hibbard, Billy B.
PATENT ASSIGNEE(S): Dow Chemical Co.
SOURCE: U.S., 10 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3432454	A	19690311	US 1965-442479	19650324

PRIORITY APPLN. INFO.: US 1965-442479 19650324

AB An aq. dispersion of a water-sol. poly(N-alkyl-3-morpholinone) is mixed with a dispersion of a water-sol. org. polyalkenyl polymer with recurring sulfo and carboxyl moieties to give a water based mixt. of controllable viscosity which is used as a viscosity building agent in cosmetic prepns. Thus, a Na poly(styrene-p-sulfonate) (I) of mol. wt. 800,000 was prepd. and dissolved in H2O to give a 2.5% soln. A similar 2.5% soln. of a 4-vinyl-3-morpholinone polymer (II) with K value 60 was also prepd. and equal vols. of the 2 solns. were mixed with stirring at room temp. to give a vehicle with a higher viscosity than either soln. alone. The mixt. became semisolid and was sealed in a flexible tube. The product was then expressed from the tube and spread with a finger to give an intact fluid or film membrane which was adhesive, uniformly continuous, and showed no tendency to flow, drip, or run. Similar prepns. were obtained using a biol. active material prepd. by treating II with iodine in CH2Cl2 soln., ammonium poly(styrene sulfonate), the product of II and NaOH, a soln. contg. herbicidal ingredients which were the alkanolamine salts of the EtOH and iso-PrOH series of 2,4-dinitro-o-sec-butylphenol, vinyl acetatemaleic acid copolymer, a polyacrylamide com. flocculant, a hydrolyzed styrene-maleic anhydride copolymer, a com. sulfonated styrene polymer, a germicidal compn. consisting of the II-PhONa adduct, N-isopropenylmorpholin-3-one, and solns. in concd. H2SO4 or H3PO4. The polymeric materials were also blended dry and added to water to give the viscous agent and an ir spectrum of a mixt. of II and benzenesulfonic acid showed no free acid groups and a displacement of the carbonyl groups. The uniform film formed was dried and the resulting polymer stored and added to H2O to give a reconstituted viscous material. The compn. was also used with a TiO2 filler as a fire fighting agent for cooling superheated areas of combustible fabric, as a flood preventative in soil conservation areas, and as an ammonia-contg. fertilizer sprayable by plane.

IC C08F; A61K
NCL 260029600
CC 36 (Plastics Manufacture and Processing)
ST viscosity baliding vinylmorpholinone **polymers**; vinylmorpholinone **polymers** viscosity baliding; **polymers** vinylmorpholinone viscous
IT **Fertilizers**
RL: USES (Uses)
(aqueous ammonia, thickening agents for)
IT Waters, natural
(sea, thickening agents for, vinylmorpholinone **copolymers** as)
IT **Soils**
(**stabilization** of, thickening agents for)
IT Bactericides
Cosmetics
Lotions

Ointments
Toilet preparations
(thickening agents for, vinylmorpholinone **copolymers** as)
IT Thickening agents
(vinylmorpholinone **copolymers**, for aq. dispersions)
IT 9003-53-6, uses and miscellaneous
RL: USES (Uses)
(sulfonated, thickening agents from vinylmorpholinone **polymers** and, for aq. solns.)
IT 1336-21-6
RL: USES (Uses)
(thickening agents for, vinylmorpholinone **copolymers** as)
IT 28517-76-2 28517-78-4
RL: USES (Uses)
(thickening agents from carboxy group-contg. **polymers** and, for aq. solns.)
IT 9003-05-8 9011-13-6, uses and miscellaneous
RL: USES (Uses)
(thickening agents from vinylmorpholinone **polymers** and partially hydrolized, for aq. solns.)
IT 24980-59-4, uses and miscellaneous 25704-18-1
RL: USES (Uses)
(thickening agents from vinylmorpholinone **polymers** and, for aq. solns.)

L22 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1968:79172 CAPLUS
DOCUMENT NUMBER: 68:79172
TITLE: Polyacrylamide-base **compositions** for **soil treatment**
INVENTOR(S): Shkol'nik, Ya. Sh.; Dombrovskii, A. V.; Shkol'nik, R. S.
SOURCE: U.S.S.R. From: Izobret., Prom. Obraztsy, Tovarnye Znaki 1967, 44(5), 98.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 192405		19670206	SU	19640701

AB The compns. are prepd. by sapon. of acrylonitrile with H2SO4 and neutralization of the sapon. products with an aq. soln. of KOH with NH3. To obtain a complex fertilizer with soil-structure-forming properties, primarily for **irrigation** agriculture, a mixt. of solns. contg. microamts. of Mn salts, NH4 phosphate and molybdate, and H3BO3 is added to a neutralized soln. of acrylamide contg. sulfates and acrylates of K and NH4. After diln. with H2O until the complete soln. of all the components is achieved, the product is polymd. at 79-80.degree. in the presence of radical initiators.
IC C08F
CC 36 (Plastics Manufacture and Processing)
ST ACRYLONITRILE SAPON; **SOIL TREATMENT** POLYACRYLAMIDES; POLYACRYLAMIDE **COMPNS**; SAPON ACRYLONITRILE; SULFURIC ACID VS ACRYLONITRILE
IT **Fertilizers**
RL: USES (Uses)
(**acrylamide polymers** with **acrylic**

acid salts as **soil-conditioning**)
IT **Soils**
(**conditioners** for, **acrylamide polymers** with **acrylic acid** salts as **fertilizing**)
IT **Acrylic acid**, salts
RL: USES (Uses)
(**polymers** with **acrylamide**, for **soil-conditioning fertilizes**)
IT Acrylamide
RL: USES (Uses)
(**polymers** with acrylic salts, for **soil-conditioning fertilizers**)

L22 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1966:62971 CAPLUS
DOCUMENT NUMBER: 64:62971
ORIGINAL REFERENCE NO.: 64:11813c-d
TITLE: The application of Zn and Co acrylamide and methacrylate **copolymers** as **soil stabilizers** and trace **fertilizers**
AUTHOR(S): Zrazhevskii, M. N.
SOURCE: Mikroelementy v Zhizni Rast. Zhivotn. i Cheloveka, Akad. Nauk Ukr. SSR, Inst. Fiziol. Rast. Tr. Koordinats. Soveshch. (1964), 1963, 214-17
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Many attempts are being made to use polymers to convert pulverized, structureless soils into aggregated-structural form. By adding 200-500 kg./ha. of polyacrylamide to arable soils, an artificial soil structure with 30-80% waterproof aggregates is formed and fertility increases 10-40%. Polyelectrolytes of CP-Co (N 11.28% and Co 2.32%) and CP-Zn (N 11.35% and Zn 6.88%) were tested on Zapreid Ki village soils (Kiev Region, Ukraine). A 0.2% aq. soln. of polyelectrolytes with ZnSO4 and CoSO4 was added until a concn. of 0.02% of the wt. of dry soils was attained. The buckwheat crop increased >50%; the flax increased less. The plants on the newly acquired structural soils had better growth.
CC 73 (Fertilizers, Soils, and Plant Nutrition)
IT **Fertilizers**
(acrylamide-methacrylate **copolymer** complexes as)
IT Soils
(conditioners for, acrylamide-methacrylate **copolymers** as)
IT Acrylamide, **polymers** with methacrylate
Cobalt, with acrylamide-methacrylate **polymer**
Methacrylic acid, ester **polymer** with acrylamide
(as **soil stabilizer**)
IT 7440-66-6, Zinc
(complexes with acrylamide-methacrylate **copolymer**, as **soil stabilizer**)

L22 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1966:47226 CAPLUS
DOCUMENT NUMBER: 64:47226
ORIGINAL REFERENCE NO.: 64:8881b-c
TITLE: The effect of long term **fertilizer** use with crop rotation on the yield and quality of the winter rye grain
AUTHOR(S): Kiseleva, I. A.
SOURCE: Dokl., Rossiisk. Sel'skokhoz. Akad (1964), No. 99, 257-61
DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Long term fertilizing and liming of peat-podzol soil increases the N content in winter rye grains. The highest yield is obtained by simultaneous application of org. and mineral fertilizers on a lime background. With crop rotation and fertilizer application the starch content decreases. Liming of the soil results in further starch decreases and in the increase of the N content in the grain. The protein content in the grain increases upon fertilizing and liming of soil.

CC 73 (Fertilizers, Soils, and Plant Nutrition)

IT Rye
(**fertilizer** expts. with)

IT Proteins
(metabolism of, by rye, **fertilizer** effect on)

IT **Fertilizers**
(rye response to)

IT Lime
(**soil treatment** with, rye response to)

IT 7727-37-9, Nitrogen 9005-25-8, Starch
(metabolism of, by rye, **fertilizer** effect on)

IT 3426-89-9, Phosphorodichloridous acid, phenyl ester
(reaction products with diethylene glycol or 1,5-pentanediol and propylene oxide. for vinyl compd. **polymer** stabilization)

L22 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1965:413222 CAPLUS
DOCUMENT NUMBER: 63:13222
ORIGINAL REFERENCE NO.: 63:2352g-h
TITLE: **Stabilization** of **soils**
PATENT ASSIGNEE(S): International Synthetic Rubber Co. Ltd.
SOURCE: 19 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 643304		19640803	BE	
FR 1390454			FR	

PRIORITY APPLN. INFO.: GB 19630206

AB Intol 1570, a copolymer of styrene and butadiene (approx. 23:77) with a Hooney viscosity of approx. 125 ML4at 100.degree., was mixed with a mineral, aromatic, or naphthenic oil, including Sundex 1585, in ratios of 100:50-1000 parts by wt., resp., and sprayed on soils as a soil capping agent. The film did not interfere with seed germination or emergence of the shoots of grains, lettuce, onions, turnips, peas, beans, or grasses. It prevented erosion by wind and water in soil, and in storage heaps of ores or other minerals. Emulsified with casein, Texofor FX 51 (a condensate of alkylphenol and ethylene oxide), or oleic acid + KOH, the mixt. carried pesticides, herbicides, or soil conditioners (carbon black, chimney soot, chalk, and kaolin).

CC 73 (Fertilizers, Soils, and Plant Nutrition)

IT **Fertilizers**
(ammoniated HNO3-treated phosphate, with high water-sol. P2O5)

IT Soils
(consolidation, by butadiene-styrene **copolymers**)

IT 1,3-Butadiene **polymers**, with styrene
Styrene **polymers**, with butadiene
(as **soil stabilizers**)

L22 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1964:78726 CAPLUS
DOCUMENT NUMBER: 60:78726
ORIGINAL REFERENCE NO.: 60:13836h,13837a-b
TITLE: Some principles in the **stabilization** of clay **soils** with synthetic additives of structure-forming and cation-active hydrophobic substances
AUTHOR(S): Kuznetsova, L. E.; Serb-Serbina, N. N.; Rebinder, P. A.
SOURCE: Dokl. Akad. Nauk SSSR (1964), 154(4), 933-5
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Soil stabilization with poly(vinyl alc.) (I), mol. wt. 40,000, contg. 2-3% acetyl groups, and with I contg. cetyltrimethylammonium bromide (II) was studied. The addn. of up to 2% I (dry basis of soil) increased the stability, R. The crushing strength of specimens with a min. moisture content (W = 13.3%) increased from 4.2 to 7-9 kg./sq. cm. and specimens satd. with H2O increased from 0.0 to 8-10 kg./sq. cm. The max. R was attained with 0.25% I + 0.5% II and with 0.5% I + 0.05% II. With 1 and 2% I the amt. of II necessary for the max. R was reduced to 0.02-0.03 and 0.005%, resp. The addn. of II above the optimum amts. lowered R.
CC 73 (Fertilizers, Soils, and Plant Nutrition)
IT Soils
(conditioning of, by vinyl alc. **polymers** and mixts. with cetyltrimethylammonium bromide)
IT Mandarins
(**fertilizers**, leaching from soil)
IT **Fertilizers**
(mandarin, leaching from soil)
IT 9002-89-5, Vinyl alcohol **polymers**
(and mixts. with cetyltrimethylammonium bromide, **soil stabilization** by)

L22 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1958:27037 CAPLUS
DOCUMENT NUMBER: 52:27037
ORIGINAL REFERENCE NO.: 52:4900g-i
TITLE: Methods of evaluating aggregate stabilization by hydrolyzed polyacrylonitrile (HPAN) as it is affected by various inorganic salts
AUTHOR(S): Jones, M. B.; Martin, W. P.
CORPORATE SOURCE: Ohio Agr. Expt. Sta., Columbus
SOURCE: Soil Sci. (1957), 83, 475-9
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Of 3 methods of application of conditioner the pouring method was found most suitable for testing the effects of added salts. Aggregate stability was reduced most by Mg(NO3)2, MgCl2, Ca(NO3)2, and CaCl2, and increased most by KOH, NaOH, Mg(OH)2, and KH2PO4. The effect of added cation or anion on aggregate stability of HPAN was in the order of the lyotropic series. A synthetic fertilizer made with various salts was found to affect aggregate stability in the presence of fertilizer in accordance with the salts used to make up the fertilizer. However, if the conditioner was added first, the fertilizer salts had little effect.
CC 15 (Soils and Fertilizers)
IT **Fertilizers**
(from salts, effect on soil aggregation by hydrolyzed polyacrylonitrile)
IT HPAN

(**soil stabilization** by, effect of salts on)
IT 25014-41-9, Acrylonitrile **polymers**
(hydrolyzed, **soil stabilization** by, salt effect on)

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=> fil wpids
FILE 'WPIDS' ENTERED AT 14:32:36 ON 27 FEB 2003
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     (FILE 'WPIDS' ENTERED AT 14:24:10 ON 27 FEB 2003)
                DEL HIS
L1         15243 S SOIL# (S) (TREAT? OR CONDITION? OR STABILI?)
L2         11809 S FERTILIZ?
L3        567400 S POLYMER# OR COPOLYMER#
L4            75 S L1 AND L2 AND L3
L5            39 S L4 AND C04/DC
L6          9133 S ACRYLAMIDE# (S) (ACRYLIC ACID# OR ACRYLATE?)
L7             4 S L1 AND L2 AND L6
L8             3 S SOIL# AND L2 AND L6 AND C04/DC
L9           100 S SOIL# AND L2 AND L3 AND C04/DC
L10            4 S L5 AND IRRIGA?
L11            7 S L9 AND IRRIGAT?
L12         5733 S L3 (4A)  ANION?
L13            2 S L5 AND L12
L14           18 S AQUEOUS AND L5
L15           23 S L7 OR L8 OR L10 OR L11 OR L13 OR L14

     FILE 'WPIDS' ENTERED AT 14:32:36 ON 27 FEB 2003

=> d .wp 1-23

L15  ANSWER 1 OF 23  WPIDS (C) 2003 THOMSON DERWENT
AN   2002-722581 [78]    WPIDS
CR   1999-131933 [11]; 2001-202598 [20]; 2001-257680 [26]; 2003-016791 [01]
DNC  C2002-204409
TI   Suspension useful for **soil conditioning** comprises
     water-soluble polyacrylamide particles in an **aqueous** medium.
```

DC A14 A97 **C04**
IN ARNOLD, C A; WALLACE, A
PA (ARNO-I) ARNOLD C A; (WALL-I) WALLACE A; (SOIL-N) SOIL ENHANCEMENT TECHNOLOGIES LLC
CYC 100
PI US 2002095965 A1 20020725 (200278)* 6p
WO 2002088224 A2 20021107 (200301) EN
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
ADT US 2002095965 A1 Div ex US 1997-897015 19970718, Provisional US 1998-93269P 19980717, Cont of US 1999-290483 19990412, CIP of US 1999-356271 19990716, CIP of US 2000-694708 20001023, US 2001-843608 20010426; WO 2002088224 A2 WO 2002-US13376 20020426
PRAI US 1998-93269P 19980717; US 1997-897015 19970718; US 1999-290483 19990412; US 1999-356271 19990716; US 2000-694708 20001023; US 2001-843608 20010426
AB US2002095965 A UPAB: 20030101
NOVELTY - A suspension comprises water-soluble polyacrylamide (PAM) particles in an **aqueous** medium.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) forming the suspension involving mixing PAM particles comprising -270 mesh particles into a saturated solution of an ammoniated salt (the suspension formed containing at least 2.5 wt.% PAM); and

(2) **conditioning soil** involving adding the suspension to an unsaturated **aqueous** medium and spreading the medium with PAM on the **soil**.

ACTIVITY - None given.

MECHANISM OF ACTION - **Soil conditioner**.

USE - For **soil conditioning**.

ADVANTAGE - The suspension is stable for at least 12 hours without any visible settling or stratification and has a low viscosity suitable for use in a spray **irrigation** system. The suspension is easy to mix into saturated solutions of commonly available ammoniated salt and can be done safely by farmers in the field. The suspension has a very high concentration and shows no apparent stratification or separation even after 6 months on the shelf. The PAM in the suspension goes into the solution almost instantly (less than about a minute) when added to water. Dwg.0/0

TECH UPTX: 20021204
TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Medium: The medium comprises a saturated solution of an ammoniated salt in the form of a liquid **fertilizer** or an unsaturated solution of a **soil conditioning** salt. The ammoniated salt is ammonium sulfate or nitrate, urea or thiourea (preferably ammonium sulfate). The **soil conditioning** salt includes a divalent calcium salt.

TECHNOLOGY FOCUS - **POLYMERS** - The suspension comprises PAM (about 2.5-15 wt.%). The -270 mesh particles include -400 mesh particles (about 85%).

TECHNOLOGY FOCUS - AGRICULTURE - Preferred Method: The **aqueous** medium is spread by spraying through a nozzle of an **irrigation** system (table for at least 12 hr.).

L15 ANSWER 2 OF 23 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-698580 [75] WPIDS
DNC C2002-197792
TI Fungal inoculant composition useful in landscaping clothes comprises seeds and a fungal inocula.
DC **C04** C05 D16
IN STAMETS, P
PA (STAM-I) STAMETS P
CYC 98
PI WO 2002065836 A2 20020829 (200275)* EN 74p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
ADT WO 2002065836 A2 WO 2002-US5495 20020219
PRAI US 2002-790033 20020219; US 2001-790033 20010220
AB WO 200265836 A UPAB: 20030214
NOVELTY - Fungal inoculant composition comprises seeds and a fungal inocula selected from saprophytic fungi and/or entomopathogenic fungi.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) a fungal inoculation delivery system for mycofiltration and mycoremediation involving a fungal inoculant selected from mushroom spores, actively growing mycelial hyphae, dried mycelial hyphae, freeze-dried mycelial hyphae, powdered mushrooms and/or conidia, and a fiber substrate to which the fungal inoculant is applied selected from geocloth, geofabric, **soil** blanket, landscaping fabric and other fabric, netting, rug, mat, matting, fiber felt pad, straw tatamis, mattress insert, burlap bag, paper, fiber log, fiber brick, fiber basket, gabion and/or mulch;

(2) a delivery system for mycotechnologies (A) comprising a component (C1) manufactured from a biodegradable material, a fungal inoculant selected from spore, mycelium and/or powdered mushrooms, and seeds;

(3) a mulch composition comprising a mulch selected from mulched wood chips, sawdust, wood pulp, corrugated cardboard, pressed cardboard, straw, agricultural waste fiber and/or composts, a fungal inoculant selected from the group consisting of a saprophytic mushroom inoculant and/or an entomopathogenic fungal inoculant and seeds;

(4) agricultural equipment including planting equipment, harvesting equipment, equipment for preparing agricultural fields and equipment for other agricultural purposes. The agricultural equipment further comprises a device for delivering fungal inocula;

(5) preserving and restoring habitats and catalyzing habitat recovery using saprophytic fungi as a keystone species involving inoculation of a substrate with a saprophytic mushroom species to form an inoculated substrate and using the inoculated substrate for sheet inoculation of at least one layer of lignin- and cellulose-containing substrate applied in the selected habitat;

(6) combating chemical and biological contaminants selected from organic compounds, inorganic compounds, metals, biological organisms, silt, and/or sediment involving selecting a saprophytic mushroom species capable of remediating the contaminant and obtaining inocula of the saprophytic mushroom species; inoculating a fiber structure constructed from materials containing mulch, geocloths, geofabrics, **soil** blankets, landscaping fabrics, fabrics, nettings, rugs, mats, mattings, fiber felt pads, straw tatamis, mattress inserts, burlap bags, papers, fiber logs, fiber bricks, gabions, fiber baskets, cardboards, and/or papers with the saprophytic mushroom fungi to form a fungally impregnated fiber structure; and contacting the fungally impregnated fiber substrate

layer with a contaminated substrate;

(7) a composition for attracting insects to a centralized locus comprising an extract (E) of at least one entomopathogenic fungal species infused into a biodegradable product selected from wood, wood chips, sawdust, wood pulp, wood mulch, wood wastes, wood pellets, pressed cardboard, corrugated cardboard cardboards, paper including leaf paper, wood-based paper, non-wood paper and paper pellets, rag stock, cellophane, hemp, hemp-like materials, cotton, bamboo, papyrus, jute, flax, sisal, coconut fibers and coir, wheat straw, rice straw, rye straw, oat straw and other cereal straws, reeds, grasses, grains, grain hulls, seed hulls, cornstalks, corncobs, soybean roughage, coffee plants, waste and pulp, sugar cane bagasse, banana fronds, palm leaves, the hulls of nuts including almonds, walnuts, sunflower, pecans and peanuts, soy waste, cactus waste, tea leaves, agricultural waste products, wool, hair, and/or hide;

(8) attracting insects to a centralized locus involving infusing the extract (E);

(9) sequestering metals involving selecting a metal-concentrating saprophytic mushroom species, inoculating a fiber substrate with the metal-concentrating saprophytic mushroom species, and contacting the inoculated fiber substrates with substrates rich in metal;

(10) sequestering (M1) carbon and accumulating carbon credits involving introducing a fungal inoculant and sequestering carbon into a mycelial matrix exoskeleton, internal cell components and extracellular components;

(11) inoculating substrates (M2) for mycofiltration involving a sandwich inoculation of at least two layers of fungal inoculum; and

(12) collecting spores of desired mushroom species for mycotechnologies, mycoremediation and mycofiltration involving growing the desired mushroom species in mushroom cultivation facility equipped with ducting for air circulation and collecting the spores from the ducting.

ACTIVITY - Insecticide; Pesticide; Fungicide.

MECHANISM OF ACTION - None given.

USE - As fungal inoculant composition; in fungal inoculation delivery system for mycofiltration and mycoremediation; delivery system for mycotechnologies; as mulch composition; in agricultural equipment; for preserving and restoring habitats and catalyzing habitat recovery using saprophytic fungi as a keystone species; For combating chemical and biological contaminants selected form organic compounds, inorganic compounds, metals, biological organisms, silt, and/or sediment; as a composition for attracting insects to a centralized locus; for sequestering the metals or carbon and accumulating carbon credits; for inoculating substrates for mycofiltration; for collecting spores of desired mushroom species for mycotechnologies, mycoremediation, and mycofiltration (all claimed); for ecological rehabilitation and restoration, bioremediation, habitat preservation and agriculture .

ADVANTAGE - The composition enhances the effectiveness of fungal inoculation and growth and thus improves habitat preservation and habitat recovery. The composition provide as an aid for the habitat recovery and preservative and also an aid for the agriculture, including both plant cultivation and mushroom cultivation. The white rot fungi is capable of degrading environmentally persistent organic compounds and those fungi effective against biological organisms e.g. bacteria, viruses, yeasts, molds, protozoa, rotifers, and/or nematodes. The extract is capable of causing substantial mortality in a targeted insect. The composition uses entomopathogenic fungal components for controlling, reducing or eliminating pest insects or disease-carrying insects in the applied environments. The composition uses a cardboard boxes as a delivery system for fungi optionally combining with plat seeds for starting gardens, for controlling insects.

Dwg.0/0

TECH UPTX: 20021120

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The seeds are seed of garden vegetables, agricultural crops, grasses, herbs, shrubs and/or trees. The fungal inocula is spore, conidia, actively growing mycelial hyphae, dried mycelial hyphae, freeze-dried mycelial hyphae and/or powdered mushroom. The fungal inocula further includes fungi selected from mycorrhizal fungi, parasitic fungi and/or fungi imperfecti. The fungi are gilled mushrooms, polypore mushrooms, basidiomycetes, ascomycetes, jelly fungi (including Trimella), mycorrhizal mushrooms and endomycorrhizal non-mushroom fungi, fungi with optionally perfect state, fungi imperfecti and related molds and yeasts or endomopathogenic fungi. The gilled mushrooms include Agaricus, Agrocybe, Armillaria, Clitocybe, Collybia, Conocybe, Coprinus, Flammulina, Giganopanus, Gymnopilus, Hypholonma, Inocybe, Hypsizygus, Lentinula, Lentinus, Lenzites, Lepiota, Lepista, Lyophyllum, Macrocybe, Marasmius, Mycena, Omphalotus, Panaeolus, Panellus, Pholiota, Pleurotus, Pluteus, Psathyrella, Psilocybe, Schizophyllum, Sparassis, Stropharia, Termitomyces, Tricholoma, and/or Volvariella). The polypore mushrooms include Albatrellus, Antrodia, Bjerkandera, Bondarzewia, Bridgeoporus, Ceriporia, Coltricia, Daedalea, Dentocorticium, Echinodontium, Fistulina, Flavodon, Fomes, Fomitopsis, Ganoderma, Gloeophyllum, Grifola, Hericium, Heterobasidion, Inonotus, Irpex, Laetiporus, Meripilus, Oligoporus, Oxyporus, Phaeolus, Phellinus, Piptoporus, Polyporus, Schizopora, Trametes and/or Wolfiporia). The Basidiomycetes include Auricularia, Calvatia, Ceriporiopsis, Coniophora, Cyathus, Lycoperdon, Merulius, Phlebia, Serpula, Sparassis and/or Stereum. The Ascomycetes include Cordyceps, Morchella, Tuber and/or Peziza. The mycorrhizal mushrooms and endomycorrhizal and ectomycorrhizal non-mushroom fungi include Acaulospora, Alpova, Amanita, Astraeus, Athelia, Boletinellus, Boletus, Cantharellus, Cenococcum, Dentinum, Gigaspora, Glomus, Gomphidius, Hebeloma, Lactarius, Paxillus, Piloderma, Pisolithus, Rhizophagus, Rhizopagon, Rozites, Russula, Sclerocytis, Scleroderma, Scutellospora, Suillus, and/or Tuber. The fungi with optionally perfect state include Phanerochaete and Cordyceps. The fungi imperfecti and related molds and yeasts include Actinomyces, Alternaria, Aspergillus, Botrytis, Candida, Chaetomium, Chrysosporium, Cladosporium, Cryptococccus, Dactylium, Doratomyces (stysanus), Epicoccum, Fusarium, Geotrichum, Gliocladium, Humicola, Monilia, Mucor, Mycelia Sterilia, Mycogone, Neurospora, Papulospora, Penicillium, Rhizopus, Scopulariopsis, Sepedonium, Streptomyces, Talaromyces, Torula, Trichoderma, Trichothecium and/or Verticillium. The entomopathogenic fungi include Metarhizium, Beauveria, Paecilomyces, Verticillium, Hirsutella, Aspergillus, Akanthomyces, Desmidiospora, Hymenostilbe, Mariannaea, Nomuraea, Paraisaria, Tolypocladium, Spicaria, Botrytis, Rhizopus, the Entomophthoracae and/or other Phycomycetes, Cordyceps. The saprophytic mushroom inoculant comprises a mushroom species selected from the Pleurotus species, Trametes species, Ganoderma species, Fomes fomentarius, Fomitopsis officinalis, Fomitopsis pinicola, Stropharia rugosoannulata, Phellinus igniarius, Phellinus linteus, Psidocybe azurescens and Psidocybe cyanescens, Collybia species and Coprinus comatus. The saprophytic fungi are selected from metal-concentrating mushroom fungi, phosphorusrich fungi, anti-bacterial fungi or white rot fungi. The saprophytic fungi are mushroom fungi selected from Pleurotus species; Trametes species; Ganoderma species; Fomes fomentarius; Fomitopsis officinalis and F. pinicola; Phellinus igniarius and P. linteus; Psilocybe azurescens and P. cyanescens; Stropharia rugosoannulata, Collybia, Marasmius, Satellite, Coprinus comatus, Lycoperdon perlaium and L. lilacinum and/or Psathyrella hydrophila. The spores and mycelium are selected from saprophytic fungi, mycorrhizal fungi and/or entomopathogenic fungi. The powdered mushrooms are selected from gourmet and/or medicinal mushrooms. The seeds are seeds

of plants selected from vegetables, cereal crops, fruits, herbs, spices, shrubs, bushes and other agriculturally useful crops. The seeds are seeds of annual plants for use in creating seed stock for future plantings. The lignin- and 5 cellulose-containing substrate in the selected habitat is exposed to water runoff. The habitats additionally comprises a fungus and plant sources selected from seeds and/or and seedlings. The saprophytic fungi is selected from Hypsizygus Ulmarius, Stropharia rugosoannulata, Coprinus comatus and/or Hypholoma sublateritium. The fungal inocula uses inoculate materials selected from straw, corn husks, corn cobs, cotton seeds or cotton wastes. The fungal inocula is used to inoculate the remaining agricultural wastes or the **soil**. The seeds and seedlings are selected from the group of plants containing garden vegetables, agricultural crops, grasses, herbs, shrubs, and trees. The habitat is selected gravel roads, farms, forests, riparian zones and buffers, urban landscapes and suburban landscapes. The metal-concentrating saprophytic mushroom species is selected from Collybia, Marasmius or satellite genera. The contaminant is selected from phosphorus containing agricultural pesticides, **fertilizers**, and/or animal wastes.

Preferred Method: The filtration of biological organisms, sediment or silt is carried out using the microfiltration. The fungal mycelium is allowed to grow on the fiber substrate and the fungal mycelium is metabolically suspended via a refrigeration, drying and freeze-drying process. The fungally impregnated fiber structure filters a contaminant selected from biological organisms, sediments or silts. The fungally inoculated fiber substrate is inoculated with fungi selected from phosphorus rich mushrooms. The centralized locus is selected from insect monitoring stations, insect bait stations, insect traps or insect **treatment** and control methods. The method (M1) further involves introduction of a plant component selected from seeds or seedings. The fungal inoculum in (M2) is applied via sheet inoculation and the substrate is allowed to fruit mushrooms and sporulate.

Preferred Substrate: The contaminated substrate is an **aqueous** substrate. The contaminated substrate is a contaminated **aqueous** substrate selected from lakes, ponds, rivers, streams, creeks, runoffs, effluents and/or ditches.

Preferred Equipment: The harvesting equipment is selected from round straw balers, square straw balers, corn huskers, corn shellers, cotton pickers, cotton strippers or cotton gins. The planting equipment is selected from seeders, air seeders, planters, air planters, plate planters, vacuum planters, drills, air drills, air seeding systems, row crop cultivators, planting systems, inter-row planting systems, between row planting systems and/or rice transplanters. The harvesting equipment is selected from combines, round balers, square balers, hay cubers, threshers, threshing machines, forage harvesters, windrowers, rakes, tedders, mowers, rotary mowers, sicklebar mowers, slashers, cutters, straw choppers, stalk choppers, corn pickers, cotton strippers, cotton gins, corn huskers, shellers, rice harvesters, mechanical fruit pickers, mechanical nut pickers, and/or loaders. The equipment for preparing agricultural fields are sprayers, **irrigators**, plows, cultivators, air carts, tillers, tillage equipment, disks, openers, rippers, harrows, rotary hoes, blades, flail shredders, flail cutters, rotary cutters, manure spreaders, flame weeders, pruning machines, skids, scrapers, loaders, **fertilizer** spin spreaders, and/or pendulum spreaders. The equipment for other agricultural purposes are shredders and/or chippers.

Preferred System: The delivery system additionally comprises a component selected from seeds and/or seedlings. The delivery system (A) further comprises a material selected from liquids, glues, adhesives and/or tackifiers.

TEXTILE AND PAPERS

Preferred Composition: The fungal inoculant composition comprises a

saprophytic mushroom inoculant, fiber substrate transfer agent, landscaping cloths and multch material. The saprophytic mushroom inoculant are selected from spores, actively growing mycelial hyphae, dried mycelial hyphae, freeze-dried mycelial hyphae, and/or powdered mushrooms. The fiber substrate transfer agent is selected from landscaping. The mulch material comprises a material selected from mulches prepared from wood chips, sawdust, wood pulp, straw, compost, agricultural waste products, cardboard, and/or paper.

Preferred Components: The fiber substrate material is selected from landscaping cloth, mulch, paper products or cardboard. The landscaping cloth material is geocloths, geofabrics, **soil** blankets, landscaping fabrics, fabrics, nettings, rugs, mats, mattings, fiber felt pads, tatamis, mattress inserts, burlap bags, gabions, fiber logs, fiber bricks, fiber baskets, pressed cardboards, corrugated or cardboards, and/or papers (preferably selected from textile, veil, matted, mesh matting, matting rug, felt pressing, blanket, filter, woven, woven roving, open weave, nonwoven, knitted, strand roving, continuous strand, chopped strand, milled fiber, knotted, yarn, braided, high-pressure extrusion, and/or composites). The mulch material is mulches of wood chips, sawdust, wood pulp, straw, cardboard, agricultural waste fibers, and/or composts. The mulch is dispersed equipment selected by hydroseeding equipment, pressure spray and agricultural equipment. The fiber substrate material comprises a fiber selected from wood, wood chips, sawdust, wood pulp, wood wastes, wood pellets, paper fiber pellets, leaf paper, wood-based papers, non-wood papers, pressed cardboard, corrugated cardboard, fiberized rag stock, cellophane, hemp and hemp-like materials, bamboo, papyrus, jute, flax, sisal, coconut husk fibers, cereal straws, reeds, grasses, seed hulls, cornstalks, corncobs, soybean roughage, coffee plants, coffee waste, coffee pulp, sugar cane bagasse, banana fronds, palm leaves, nut hulls, soy waste, cactus waste, tea leaves, agricultural waste products, wool, hair, and/or hide. The fiber substrate additionally comprises an amendment selected from germination enhancers, growth enhancers, sugars, molasses, sorghum, mannitol, sorbitol, corn steep liquor, corn meal and soybean meal, vegetable oils, casein hydrolysate, grain brans, grape pumice, ammonium salts, amino acids, yeast extract, vitamins, nutritional supplements, surface active agents, wetting agents, spore encapsulating materials, hyphae encapsulating materials, yeasts, bacteria, and/or fungi imperfecti. The biodegradable material is selected from wood, cardboard, paper, straw and/or biodegradable **polymer** based materials. The biodegradable material forms at least part of a container selected from boxes, crates, sacks, socks or gabions. The biodegradable material contains the fungal inoculant and the seeds. (C1) is at least a portion of cardboard box. The cardboard box becomes a medium for growth when the box is disassembled and water is added. The cardboard box is a component of an educational kit. The cardboard component is a rescue kit for refugees, indigenous displaced persons and victims of natural and man-made disasters.

Preferred Kit: The kit further comprises an ecological map paired with culturally and ecologically appropriate fungus and plant species.

Preferred Composition: The composition further includes seedlings. The mulch composition comprising delivery system additionally comprises a component selected from **fertilizers**, **soil** improvement substances, and/or tackifiers.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The fungal inoculant further comprises a liquid (preferably selected from water, vegetable oils and/or lubricants). The liquid contains the fungal inoculant and also includes the seeds. (C1) is manufactured from biodegradable materials. (C1) manufactured from the biodegradable, is a container at least partially filled with a fiber substrate. The fungal inoculant and seeds are separately packaged. The habitat contains a

contaminant selected from the group consisting of sediments and silts, organic compounds, inorganic compounds, metals, and/or biological organisms. The substrates rich in metal are ores, mine effluents, and/or industrial effluents.
Preferred Method: The fungal inoculant is applied to a fiber substrate material. The fiber substrate transfer agent is applied to a substrate contaminated with a contaminant selected from polynuclear aromatic hydrocarbons, cyclic hydrocarbons and carbonaceous compounds, chemical pesticides (including organophosphates, halogenated compounds, nitrogenous compounds, hormones and prohormones, detergents and soaps, textile dyes, bacteria, viruses, protozoa, nematodes, medical wastes, agricultural runoff, urban runoff, silt, sediment, industrial wastes, and/or mine wastes). The fungal inoculant is applied to the fiber substrate and inoculated fiber substrate is applied to a separate layer of fiber substrate. The liquid fungal inoculant is applied to the component. The liquid is removed after application to the component. The fungal inoculant is allowed to germinate prior to application and form mycelium. The mycelium is metabolically suspended via a method selected from refrigeration, drying and freeze-drying. The metals are removed from the inoculated fiber substrates by using mechanical procedures, chemical procedures, and/or biological procedures. The ore is pretreated with the microorganisms.

L15 ANSWER 3 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-645676 [70] WPIDS
DNC C2002-182398
TI Isolation of water-soluble humic molecules useful to obtain complexes involves extraction of the humic fraction from organic substances immersed in water.
DC A97 **C04**
IN CESCO, S; PINTON, R; VARANINI, Z
PA (UYUD-N) UNIV UDINE
CYC 26
PI EP 1216976 A2 20020626 (200270)* EN 6p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
ADT EP 1216976 A2 EP 2001-130133 20011219
PRAI IT 2000-UD225 20001221
AB EP 1216976 A UPAB: 20021031
NOVELTY - Isolation of water-soluble humic molecules and obtaining their complexes with chemical **fertilizing** elements involves:
(1) extracting humic fraction from a sub-stratum by immersing in water;
(2) removing insoluble components and purifying and concentrating the fraction; and
(3) eluting humic molecules and correcting pH to neutral value and complexing with chemical **fertilizing** element.
DETAILED DESCRIPTION - Isolation of water-soluble humic molecules and obtaining their complexes with chemical **fertilizing** elements involving:
(1) extracting water-soluble humic fraction from a sub-stratum rich stratum rich in organic substance immersed in water;
(2) removing insoluble component from the resultant suspension to obtain the soluble humic fraction alone;
(3) the humic fraction is purified and concentrated by passing the average extract through a resin column to obtain the separation of the humidified component alone of water soluble organic compounds;
(4) the humic molecules adsorbed by the column of resin are eluted;
(5) excess metals such as Na, K, Cd, Pb are removed and pH is corrected to value near neutral; and

(6) complex of the water soluble humic molecule (SHOS) and chemical **fertilizing** element is prepared.

USE - In the field of botany and vegetable production in order to supply crops with a natural-type nutriment.

ADVANTAGE - The nutrient-material has both the ability to deliver iron in a more readily available form for the plants, compared with synthetic products used at present. The isolated fraction can be used to form a nutritional complex more readily available for the plants compared with synthetic compounds such as FeEDTA or Fe-citrate. The isolated fraction is also able by itself to modulate the biochemical mechanisms involved in the mineral nutrients of the plants, stimulating the absorption of the nutrients by the roots and encouraging a greater growth of plants. The nutritional organic composts produced can be used directly in the cultivated ground for applications in the field, without negative consequences on the environment and on the fertility of fields overtime, also without technological, practical or economical problems in application. The use of non-alkalized water rather than distilled and determined water is advantageous both in economic and practical terms, due to the easy availability of the material. Unlinked-mineralized water, non-alkalized and not de-mineralized water does not encourage the solubilization of contaminating ions, which need to be removed. The use of PVPP resin instead of Amberlite XAb resin, brings considerable advantage of a practical and technological nature. The resin possesses a specific activity in an acid environment to absorb compounds of a phenolic nature, such as humic molecules, and also its complete regenerability, which allows it to be re-used in the subsequent cycles without producing waste. The use of KOH, rather than NaOH, prevents the possible contamination of the cultivated ground by toxic and polluting substances in large quantities, such as sodium, while it allows to deliver macronutrient potassium, which has a considerable importance in the growth of vegetable species. The exhausted substratum and the sediment upon centrifugation, after the excess of water has been properly removed, can be used to prepare sub-stratum for sowing and growing plants in pots. The sub-products (e.g. non-alkalized water) of the extraction of the SHOS fraction can be reused in the new production cycle of the fraction or in agricultural processes. The isolated humic fraction obtained can be preserved at ambient temperature for prolonged periods.

Dwg.0/0

TECH UPTX: 20021031

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Method: The sub-stratum is immersed in a non-alkalized water. The pH of water used for the first extraction cycle is 6 - 7.8. The substratum immersed in the non-alkaloid water is stirred for 10 - 20 hours as per the type of sub-stratum. The quantity ratio in weight between the sub-stratum and water is about 1:20. The sub-stratum is previously ground to less than 2 mm to increase the active surface of the sub-stratum. The humic acid molecules adsorbed in the resin are eluted by passing a solution of 0.1 N KOH. The correction of the pH to the value near neutral is performed by progressively adding KOH. The step to remove the insoluble components involves filtration without application of vacuum, and subsequent centrifugation at 2000 g for 30 minutes. The sediment obtained after the filtration, consisting of residues which cannot be dissolved in water such as humic acids, humin or inorganic residues, is removed, while the part which rises to the surface is collected and subjected to further filtration at about 0.2 microm using a packing or tangential filter. The filtrate obtain is then acidified to a pH of 0.5 by adding concentrated H3PO4 followed by concentration and purification of the extracted humic acid fraction. After concentration and purification, the humic molecules adsorbed are eluted from the column by passing 0.1 N KOH to determine an alkalization (pH 12 V 13) of the environment causing the resin to lose its ability to adsorb the compounds

of phenolic nature. The eluate obtained is then **treated** with Amberlite IR120 (resin) in acid form until the solution reaches pH near 2 to remove excess K due to the elution of the molecules from the column with KOH, and also to allow a reduction in the endogenous contents of metals, naturally adsorbed, complexed and/or chelated in the humic fraction. The eluate obtained is then adjusted to a pH near neutral by adding small quantities of KOH and the extract is isolated and lyophilized. The complex of the isolated SHOS and iron or alternatively other metal and nutrients (chemical **fertilizing** elements) is obtained by dissolving the SHOS fraction in water to final concentration of 2 g/L organic and putting the solution directly containing as fraction in contact with Amberlite IR120 pretreated with iron or other nutrient in a ratio of about 1 ml solution for 1 ml of resin. After about 3 hours of contact, the solution was separated from the resin by filtration, with a suitable device without applying a vacuum, by keeping a solution containing the Fe-SHOS complex and other nutrients at ambient temperature. Preferred Components: The sub-stratum is selected from peat, compost, earth, mold, and/or peaty **soil**, either as a single sub-stratum or as a mixture of several sub-stratum.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Components: The resin used in the purification and concentration of the **aqueous** extract is polyvinylpyrrolidone (PVPP).

L15 ANSWER 4 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-634571 [68] WPIDS
DNC C2002-179065
TI Synthesizing superabsorbent polymer useful in e.g. diapers involves mixing monofunctional and multifunctional monomers in the absence of solvent and exposing the solution to energy source to initiate polymerization.
DC A14 A93 A96 B07 C07 D15 D22 F07
IN SCHUBERT, M A
PA (EVEY) EVEREADY BATTERY CO INC
CYC 1
PI US 6403674 B1 20020611 (200268)* 5p
ADT US 6403674 B1 US 2000-716193 20001117
PRAI US 2000-716193 20001117
AB US 6403674 B UPAB: 20021022
NOVELTY - Synthesizing a superabsorbent polymer involves providing monofunctional polymer (a), multifunctional polymer (b) and optionally a free radical initiator (c), mixing (a), (b) and optionally (c) to form a solution and exposing the solution to an energy source to polymerize the monomers. (a) and (b) are soluble in one another and the solution is formed in the absence of a solvent.

USE - For synthesizing superabsorbent polyacrylate polymer (claimed) and powders useful in infant diapers, adult incontinence products, feminine hygiene products, paper towels, surgical sponges, meat trays, disposable mats for outside doorways and bathrooms, house-hold pet litter, bandages and wound dressings, controlled drug delivery, humidity-controlling products, **soil conditioners**, controlled release of **fertilizers**, thickening agents for cosmetics to concrete, scaling of underground cables, artificial snow, sensors, aqueous waste management and gelling agents. Also in transdermal patches incorporating biologically active ingredients.

ADVANTAGE - The method eliminates the need for an undesirable solvent and a drying step.

Dwg.0/0

TECH UPTX: 20021022
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Process: At least two monofunctional and multifunctional monomers are provided. A photosensitive

free radical initiator is used which will form free radicals when activated by the energy source in an oxygen free environment. The energy source is UV light, an electron beam, or an X-ray or gamma-ray source.
Preferred Solution: The combined weight of monomers is at least 90 (preferably at least 95, particularly at least 99)% of the solution's total weight.
Preferred Components: (a) is:
(1) an **acrylate** monomer (selected from **acrylic acid**, 2-hydroxyethyl **acrylate**, **acrylamide**, 2-(2-ethoxy-ethoxy)ethyl **acrylate** and glycerol monoacrylate);
(2) a methacrylate monomer (selected from methacrylic acid, 2-hydroxyethylmethacrylate, 2-ethoxyethyl methacrylate and glycerol monomethacrylate); or
(3) a vinyl monomer (selected from vinyl acetate, vinyl sulfonic acid, vinyl methyl sulfone, vinyl methylacetamide, vinyl butyrate, vinyl propionate, vinyl urea, 2-vinyl pyridine, 4-vinyl pyridine and vinyl-2-pyrrolidone).
The multifunctional monomer is selected from pentaerythritol triallyl ether, diethylene glycol divinyl ether, triethylene glycol divinyl ether, 1,1,1-trimethylolpropane diallyl ether, allyl sucrose, divinyl benzene, dipentaerythritol pentaacrylate, N,N'-methylenebisacrylamide, triallylamine, triallyl citrate, ethylene glycol diacrylate, di-ethylene glycol diacrylate, di-ethylene glycol dimethacrylate, tetraethylene glycol diacrylate, trimethylol propane trimethacrylate, ethylene glycol dimethacrylate, tetraethylene glycol dimethacrylate, dipropylene glycol dimethacrylate, di-trimethylol propane tetracrylate, pentaerythritol tetraacrylate, pentaerythritol triacrylate and vinyl **acrylate**.
(c) is photosensitive and thermally activated and is benzophenone.

L15 ANSWER 5 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-329628 [36] WPIDS
DNC C2002-095232
TI New **soil treatment** composition comprises water soluble or dispersible polymer, or a surfactant and carriers and adjunct ingredients.
DC A13 A14 A97 C03
IN HAMERSKY, M W; SMITH, S D
PA (PROC) PROCTER & GAMBLE CO
CYC 96
PI WO 2002015687 A2 20020228 (200236)* EN 20p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
US 2002042346 A1 20020411 (200236)
AU 2001085104 A 20020304 (200247)
ADT WO 2002015687 A2 WO 2001-US25979 20010820; US 2002042346 A1 Provisional US 2000-226741P 20000821, US 2001-891476 20010626; AU 2001085104 A AU 2001-85104 20010820
FDT AU 2001085104 A Based on WO 200215687
PRAI US 2001-891476 20010626; US 2000-226741P 20000821; US 2001-287139P 20010427
AB WO 200215687 A UPAB: 20020610
NOVELTY - A new **soil treatment** composition comprises water soluble or dispersible polymer, or a surfactant and carriers and adjunct ingredients.
DETAILED DESCRIPTION - A new **soil** (A) **treatment** composition comprises:

(a) an active ingredient selected from (i) a water soluble or dispersible polymer, (ii) a surfactant, and (iii) combinations of (i) and (ii); and

(b) the balance carriers and adjunct ingredients; where the composition has a form selected from solids and fluids, and with the provisos that: where the fluid is a liquid and ingredient (a) is (i) or (iii), then the composition has a viscosity of 10-5000 cps; and, where the composition is a gel, then the composition has a viscosity of 10-500000 cps or more.

An INDEPENDENT CLAIM is also included for a system for delivering nutrients to plants comprising: (a) a composition as in (A); and (b) a device for delivery of the composition.

USE - The system can be used for the delivery of moisture and optionally other active ingredients to soil or plants. The compositions can be used as the sole source of moisture for a growing plant or as an adjunct source during periods of diminished watering. The compositions, systems, methods, and articles of manufacture are particularly well suited for use in household and potted plant applications, but may also be applied to larger scale (e.g. farming) applications.

ADVANTAGE - Using the system, dry soil re-wetting can be improved and moisture can be controllably delivered to soil or plants. The system can provide moisture and optionally other ingredients to plants or other cultivated flora by a system that does not have the expensive requirement of an irrigation system and that does not require daily management by the user.

Dwg.0/0

TECH UPTX: 20020610

TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The polymer may be a homopolymer or copolymer comprising one or more monomers of formula R1(R1)C=CR2(X);

R1 = H, 1-12C alkyl, 1-12C alkoxy, phenyl, substituted phenyl, benzyl, substituted benzyl, carbocyclic, heterocyclic, or mixtures;
R2 = H, 1-12C alkyl or mixtures;
X = H, -(CH2)mOH, -(CH2)mCOR, -(CH2)mCH2OCOR';
R = -OR', -N(R')2, -(CH2)nN(R)2, or mixtures;
R' = H, 1-8C alkyl, 2-8C hydroxyalkyl, -(CH2)nN(R)2, or mixtures;
R = H, 1-4C alkyl or mixtures;
m = 0-6; and
n = 2-6.

The polymer may be e.g. a polysaccharide or a derivative poly(ethylene oxide), polyvinyl alcohol, polyacrylic acid, polyacrylamide/**acrylic acid** copolymer, polydimethylamino ethyl methacrylate, carboxymethylcellulose, hydroxyethylcellulose, polyvinylpyrrolidone, polyacrylic acid/**acrylamide** copolymers, or polystyrene sulfonate.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The surfactant may be nonionic surfactant e.g. ethylene oxide (EO)/propylene oxide (PO), EO/PO/EO or PO/EO/PO surfactants, or amphoteric surfactants e.g. a betaine compound.

The compositions may further comprise a stabilizer, an insecticide, or a **fertilizer** comprising (i) a source of available nitrogen, (ii) optionally a source of available phosphorous, (iii) optionally a source of available potassium, (iv) optionally a source of heavy metals; and (v) the balance inert ingredients, carriers, and solubility aids.

L15 ANSWER 6 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-321580 [36] WPIDS
DNN N2002-252051 DNC C2002-093566
TI Soil erosion prevention method for sloping surfaces, involves spraying

mixture consisting of **aqueous** solution and cement group solidification material on slope.

DC A93 **C04** L02 P13 Q42
PA (KOGA-I) KOGA Y; (SHIM-N) SHIMA CONSULTANT KK
CYC 1
PI JP 2002013146 A 20020118 (200236)* 6p
ADT JP 2002013146 A JP 2000-195185 20000628
PRAI JP 2000-195185 20000628
AB JP2002013146 A UPAB: 20020610
NOVELTY - An **aqueous** solution with cement group solidification material that contains high molecular weight compound which comprises a kneaded mixture of magnesium salt of acrylic acid, methacrylic acid, dimethyl amino ethyl **copolymer**, polyethylene imine in diatomaceous earth and sand, is sprayed on surface of slope (24).

ACTIVITY - **Fertilizer**; **Soil Stabilizer**.
Biological data not given in source material.
MECHANISM OF ACTION - None given in source material.
USE - For preventing soil erosion in sloping surfaces of mountains or river bank.
ADVANTAGE - Forms a soil layer with air and water permeability, water retention property and high durability which is suitable for greening and sloping surface by spraying the mixture.
DESCRIPTION OF DRAWING(S) - The figure shows the spraying process of mixture.
Slope 24
Dwg.2/6

TECH UPTX: 20020610
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The **soil stabilization**/kneaded composition further comprises plant seed and organic **fertilizer**. The **stabilization** solution comprises free-sand **soil** (30-50 kg), 30 to 70 times dilution **aqueous** solution (50-70 kg), diatomaceous earth (30 - 40 kg per cubic meter), organic **fertilizer** (1.5 - 25 L) and solidification material (90 - 110 kg).

L15 ANSWER 7 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-123252 [17] WPIDS
DNN N2002-092340 DNC C2002-037982
TI Superabsorbent **polymer** powder for use in e.g. hygiene articles or **soil** improvers retains its gel permeability after pneumatic transport and mechanical working by being **treated** with a salt solution.
DC A14 A92 A96 A97 **C04** C07 D22 F07 P34
IN BOHLMANN, H; HOSE, R; INGER, W
PA (CHFS) STOCKHAUSEN GMBH & CO KG
CYC 96
PI DE 10016041 A1 20011004 (200217)* 15p
AU 2001089276 A 20011015 (200217)
WO 2001074913 A1 20011011 (200217) DE
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
EP 1280834 A1 20030205 (200310) DE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
ADT DE 10016041 A1 DE 2000-10016041 20000331; AU 2001089276 A AU 2001-89276 20010307; WO 2001074913 A1 WO 2001-EP2555 20010307; EP 1280834 A1 EP

2001-964679 20010307, WO 2001-EP2555 20010307
FDT AU 2001089276 A Based on WO 200174913; EP 1280834 A1 Based on WO 200174913
PRAI DE 2000-10016041 20000331
AB DE 10016041 A UPAB: 20020313
NOVELTY - A water- or **aqueous** liquid-absorbing **polymer** powder which has a post-crosslinked surface and which is obtained from a pre-crosslinked monomer with partially-neutralized carboxylate groups is treated, following the post-crosslinking, with a solution of a salt of an at least trivalent cation.
DETAILED DESCRIPTION - Also included is an INDEPENDENT CLAIM for use of a solution of the salt of the at least trivalent cation in restoring the gel permeability of the **polymer** powder by mixing the solution with the **polymer** powder.
USE - Claimed use is as an absorber for water or **aqueous** liquids, especially in constructions for taking up bodily fluids such as hygiene articles (especially diapers or tampons) or as foamed articles, packaging, plant growing materials, **soil** improvers or as carriers or **stabilizers** for **fertilizers** or other slow-release agents.
ADVANTAGE - Unlike prior-art superabsorbers, this **polymer** can retain its desirable properties after surface modification, pneumatic transport and mechanical working (e.g. in final product manufacture), its gel permeability not being reduced on account of abrasion; it also shows less tendency to produce fine dust or to clump under the influence of moisture than do prior-art superabsorbers.
Dwg.0/0
TECH UPTX: 20020313
TECHNOLOGY FOCUS - **POLYMERS** - Preferred Materials : The cation is Al, Fe or Mn used at 0.001-1 (especially 0.005-0.2) wt. % based on the **polymer** wt., the **polymer** having a moisture content below 10 (especially below 5) wt. % prior to the reaction and a water content during the reaction of 0.05-10 (especially 0.1-3) wt. %. The **polymer**, which may contain (optionally grafted) comonomers and which has the carboxylate groups 25-85 % neutralized, is such that, prior to reaction, it has less than 15 (especially less than 5) wt. % content of particle size below 150 micro.
Preferred Reaction : Reaction of the **polymer** powder with the salt is by mixing the reactants after post-crosslinking, the mixing being at 700-1,000 rpm and the reaction being at 10-80 (especially 20-50) degrees C

L15 ANSWER 8 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2002-064321 [09] WPIDS
DNC C2002-018801
TI **Soil conditioner** for **conditioning** **soil**, especially arable **soil**, comprises dispersion liquid in **aqueous** medium of **anionic** water soluble **polymer**, co-existing with ionic **polymer** dispersing agent.
DC A93 A97 **C04**
PA (HYMO-N) HYMO CORP
CYC 1
PI JP 2001254077 A 20010918 (200209)* 5p
ADT JP 2001254077 A JP 2000-66353 20000310
PRAI JP 2000-66353 20000310
AB JP2001254077 A UPAB: 20020208
NOVELTY - A **soil conditioner** comprises a dispersion liquid in an **aqueous** medium of **anionic** water soluble **polymer** co-existing with ionic **polymer** dispersing agent.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a

method of improving **soil**, which involves spraying the **soil conditioner** in arable **soil**.

ACTIVITY - **Fertilizer**.

MECHANISM OF ACTION - None given.

USE - For **conditioning soil**, especially arable **soil**.

ADVANTAGE - The **soil conditioner** provides excellent **soil conditioning** effect and is easy to handle.

Dwg.0/0

TECH UPTX: 20020208

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Polymer**: The **anionic** water soluble **polymer** is **copolymer** of monomer containing (meth)**acrylic acid**. The **anionic** water soluble **polymer** consists of **polymer**-dispersed liquid which is obtained by dispersion polymerization of 5-100 mol % of (meth)**acrylic acid** and 0-95 mol % of **acrylamide** monomer mixture in salt solution co-existing with ionic **polymer** dispersing agent. The ionic **polymer** dispersing agent is a cationic **polymer**.

Preferred Properties: The ionic equivalent of ionic dispersing agent is 1.5-15 meq/g.

Preferred Components: The **soil conditioner** further contains a **fertilizer** component.

TECHNOLOGY FOCUS - AGRICULTURE - Preferred Method: The **soil condition** is added on plant cultivation base, when used in slope areas.

L15 ANSWER 9 OF 23 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-029356 [04] WPIDS

DNN N2002-022768 DNC C2002-008430

TI Soil covering method of plant cultivation ground such as grass grounds and farmland, comprises spraying **aqueous** base dispersed with biodegradable resin, on ground, to form a film of biodegradable resin.

DC **C04** P13 P14

PA (MIYO) MIYOSHI YUSHI KK

CYC 1

PI JP 2001231379 A 20010828 (200204)* 7p

ADT JP 2001231379 A JP 2000-44165 20000222

PRAI JP 2000-44165 20000222

AB JP2001231379 A UPAB: 20020117

NOVELTY - A soil covering method of plant cultivation ground, comprises spraying biodegradable resin-dispersed in **aqueous** base, and forming a film of biodegradable resin on the plant cultivation ground.

ACTIVITY - Insecticide; antibacterial; herbicide.

No biological data given.

MECHANISM OF ACTION - None given.

USE - For covering fields such as grass grounds, farmland, park, golf course, flower bed, road, inclined ground or vacant land which should be prevented from weed growth. Used as insecticide, microbicide, herbicide, animal repellent, **fertilizer**, growth regulator, **soil conditioner**, useful microbes and/or coloring agents.

ADVANTAGE - The film can be easily formed by spraying the biodegradable resin on agricultural field without the need for complicated laying operation. As the film is biodegradable, post-processing of the film is eliminated, time and effort required for discarding the film is eliminated, incineration of the synthetic resin sheet is avoided and generation of harmful gas and environmental pollution due to incineration is prevented. The film has excellent moisture and heat retaining, and weed

growth preventing properties.
Dwg.0/0

TECH UPTX: 20020117
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The **aqueous**-base dispersed with biodegradable resin comprises plant seed, and agricultural chemical agent such as insecticide, microbicide, herbicide, animal repellent, **fertilizer**, growth regulator, **soil conditioner**, useful microbes and/or coloring agents.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Components: The biodegradable resin comprises cationic or anionic high molecular compound having average molecular weight of 3,00,000 or more.

L15 ANSWER 10 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2001-425294 [45] WPIDS
DNC C2001-128653
TI Liquid or semi-fluid self sustaining mulch for protecting crops against weeds, comprises a sprayable vegetable filler and a binder consisting of poly(vinyl alcohol).
DC A97 **C04** P13
IN BARGIACCHI, E; CHIELLINI, E; CINELLI, P; CORTI, A; MAGNI, S; MIELE, S
PA (AGRO-N) AGROQUALITA SRL; (BARG-I) BARGIACCHI E; (CHIE-I) CHIELLINI E; (CINE-I) CINELLI P; (CORT-I) CORTI A; (MAGN-I) MAGNI S; (MIEL-I) MIELE S
CYC 95
PI WO 2001039593 A2 20010607 (200145)* EN 18p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001021617 A 20010612 (200154)
BR 2000015982 A 20020723 (200257)
US 2002129544 A1 20020919 (200264)
EP 1237406 A2 20020911 (200267) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2001039593 A2 WO 2000-EP11676 20001123; AU 2001021617 A AU 2001-21617 20001123; BR 2000015982 A BR 2000-15982 20001123, WO 2000-EP11676 20001123; US 2002129544 A1 US 1999-450016 19991129; EP 1237406 A2 EP 2000-985083 20001123, WO 2000-EP11676 20001123
FDT AU 2001021617 A Based on WO 200139593; BR 2000015982 A Based on WO 200139593; EP 1237406 A2 Based on WO 200139593
PRAI US 1999-450016 19991129
AB WO 200139593 A UPAB: 20021031
NOVELTY - A sprayable self sustaining mulch comprises an **aqueous** based mixture of a sprayable vegetable filler and a binder which is a poly(vinyl alcohol).
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for protecting crops by applying the self-sustaining mulch to a **soil**, to form a protective layer.
USE - For protecting crops (claimed) against weeds.
ADVANTAGE - The formulation when applied on **soil**, forms a crust with the **soil**, which is able to withstand weather **conditions**. The formulation enhances crop production. It is valuable to the agricultural and horticultural industry and protects erosion-prone media, reduce evaporation, increases **soil** temperature and confer a color to the **soil**. The protective layer formed on the **soil** is porous and allows post-plant

irrigation and **fertilization**. The mulch is in the form of a sprayable liquid or semi-fluid **aqueous** mixture.
Dwg.0/0

TECH UPTX: 20010813
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Components: The filler is a carbohydrate based material (preferably starch, derivative of starch and/or fraction of starch), wood and/or straw (preferably wheat flour, wheat middlings, wheat straw, saw dust, rice flour, corn flour, starch, ground sugarcane bagasse, rice straw, hemp and/or kraft lignin). The mulch further comprises a nitrogen releaser agent, a dispersing agent (0.5 - 20 wt.%), a sprayable agronomically active ingredient and a pigment to impart coloration to a **treated soil** surface.
Preferred Method: The mulch (50 - 1000 g/m2) is applied by a spray.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - The dispersing agent is a vegetable oil. The nitrogen releaser agent is urea.

TECHNOLOGY FOCUS - **POLYMERS** - The dispersing agent is vegetable rubber latex. The nitrogen releaser agent is urea-formaldehyde resin, polyaspartate and/or polyaspartic acid.

L15 ANSWER 11 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2001-377565 [40] WPIDS
DNN N2001-276390 DNC C2001-115712
TI Environmental adjustment-cultivation **soil** for horticulture, comprises a granule provided with a natural silicon **polymer**, with intergranular space having water retention and **fertilizer** retentivity.
DC A97 **C04** D16 P13
PA (ASKA-N) ASKA CORP
CYC 1
PI JP 2001098268 A 20010410 (200140)* 13p
ADT JP 2001098268 A JP 2000-215436 20000717
PRAI JP 1999-211995 19990727
AB JP2001098268 A UPAB: 20020416
NOVELTY - Environmental adjustment-cultivation **soil** comprising a granule (3) provided with a natural silicon **polymer** (2), with the intergranular space having water retention and **fertilizer** retentivity, is new.
ACTIVITY - Antifungal; antibacterial.
MECHANISM OF ACTION - None given.
USE - The **soil** is used for horticulture.
ADVANTAGE - The **soil** has excellent water retention property, **fertilizer** retentivity, air permeability, drainage (all claimed), water permeability, and fungicidal activity. Thereby, the **soil** efficiently supplies water to a plant for a long period of time, provides excellent permeation of **irrigation** to a sublayer, provides accelerated growth, prevents nutrient outflow with water during **irrigation**, prevents decay of plant root, and prevents proliferation of bacterial spores which damage the plant growth.
DESCRIPTION OF DRAWING(S) - The figure shows the perspective diagram of the granules provided with natural silicon **polymers** and granules free from natural silicon **polymers**.
Natural silicon **polymer** 2
Granule provided with natural silicon **polymer** 3
Granule free from natural silicon **polymer** 4
Dwg.1/13

TECH UPTX: 20020416
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Granule: The granule consists of a ceramic piece, a brick piece, pulp waste materials, a useful

microorganism formulation for a plant, and materials which irradiate far infrared radiation. The granule provided with a natural silicon **polymer** on its surface, and a granule free from natural silicon **polymer** (4), are mixed in blend ratio of 50 % or less, to adjust water retention, **fertilizer** retentivity, drainage and air permeability. The cultivation **soil** is used for plant roots in a bottom portion as a water base and in an upper portion as an air base.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Property: The retention rate of the natural silicon **polymer** is 10 % or less.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Formulation: The microorganism formulation consists of bacteria, Actinomycetes and/or filamentous fungi.

L15 ANSWER 12 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2001-243999 [25] WPIDS
CR 2000-465587 [39]
DNC C2001-073097
TI Soil improving compositions useful for control of soil born pests and pathogens, consists of a predisposing agent, a carbon-skeleton-energy component, and vitamin-cofactor.
DC C03 **C04**
IN YAMASHITA, T T
PA (YAMA-I) YAMASHITA T T
CYC 1
PI US 2001000325 A1 20010419 (200125)* 7p
ADT US 2001000325 A1 CIP of US 1998-222459 19981229, US 2000-728047 20001201
FDT US 2001000325 A1 CIP of US 6187326
PRAI US 2000-728047 20001201; US 1998-222459 19981229
AB US2001000325 A UPAB: 20010508
NOVELTY - An **aqueous** composition (I) consists of:

(a) a predisposing agent;
(b) a carbon-skeleton-energy component; and
(c) vitamin-cofactor.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) an **aqueous** composition consisting of:
(a) carbon skeleton energy component;
(b) lignosulfonate;
(c) gallic acid; and
(d) a vitamin-cofactor; and
(2) a method for improving soil, comprising applying to the soil an **aqueous** composition (I).

ACTIVITY - **Soil** improver; antiparasitic; antimicrobial; **fertilizer**. A naturally infested vineyard was initially evaluated for plant parasitic nematode populations. Vines were then **treated** with a standard composition (comprising (% w/w): HI-Brix molasses (32), Ca lignosulfonate (32), urea (5), KNO3 (3.8), H3PO4 (3.4), ZnSO4.7H2O (0.8), FeSO4.7H2O (0.8), MnSO4.H2O (0.8), vitamin B complex (1) and water (20.4)) (A) or with a composition (B) (comprising (% w/w): Hi-Brix molasses (35), Ca lignosulfonate (35), gallic acid (0.1), yeast extract (2.5) and water (27.5)) (both at 50 gallon/acre) to which were each added a bacterial-fungal suspension. Nematode populations were again evaluated at 4 and 8 months. Results showed an overall change in the nematode population of +3919 for control (not **treated**), -6936 for (A) and -10591 for (B).

MECHANISM OF ACTION - None given.

USE - Soil improving compositions are useful for control of soil born pests and pathogens. The method is useful for enhancing the indigenous microbe population and the mineral release ability of the soil; reducing

disease inoculum present and parasitic nematode population in the soil; and enhancing water filtration and the fertility of the soil.

ADVANTAGE - The compositions have improved soil fertility and/or characteristics, e.g. mineral release, water filtration, the neutralization and/or degradation of toxins.

Dwg.0/0

TECH UPTX: 20010508

TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The carbon-skeleton-energy component comprises 2-10C molecules or **polymers**. The predisposing agent comprises lignosulfonate and gallic acid. Preferably the carbon-skeleton energy component is a molasses. The vitamin-cofactor is yeast extract. The composition comprises a carbon skeleton energy (10-50, preferably 30-40, % w/w), a lignosulfonate (10-50, preferably 30-40, % w/w), gallic acid (0.001-10 % w/w), a vitamin-cofactor (0.001-10, preferably 2-3, % w/w) and water (20-30 % w/w of the composition).

L15 ANSWER 13 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2001-202598 [20] WPIDS
CR 1999-131933 [11]; 2002-722581 [78]
DNN N2001-144586 DNC C2001-060101
TI Small particle size, water-soluble polyacrylamide in combination with a calcium salt is useful for **conditioning soil** with improved efficiency and lower requirements for **polymer**.
DC A14 A97 **C04** L02 P41
IN ARNOLD, C A; WALLACE, A
PA (SOIL-N) SOIL ENHANCEMENT TECHNOLOGIES LLC
CYC 94
PI WO 2001005878 A1 20010125 (200120)* EN 74p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000060999 A 20010205 (200128)
EP 1203048 A1 20020508 (200238) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SI
ADT WO 2001005878 A1 WO 2000-US19251 20000714; AU 2000060999 A AU 2000-60999 20000714; EP 1203048 A1 EP 2000-947376 20000714, WO 2000-US19251 20000714
FDT AU 2000060999 A Based on WO 200105878; EP 1203048 A1 Based on WO 200105878
PRAI US 1999-356271 19990716
AB WO 200105878 A UPAB: 20021209

NOVELTY - A bulk material comprises flowable, water-soluble polyacrylamide particles with a size of -100 mesh and which are soluble in water in 10 seconds or less.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) a method of reducing the particle size of dry granules of a water-soluble polyacrylamide (with a molecular weight of at least 15MDa) comprising subjecting the granules to rapid pressure increases and decreases;

(ii) a method of producing an **aqueous** solution of water-soluble polyacrylamide with a concentration of at least 5g/l comprising adding the bulk material to a mono- or di-valent cation salt solution;

(iii) an **aqueous** stock solution for **soil treatment** comprising at least 5g/l of a water-soluble polyacrylamide and a calcium salt in which the ratio of calcium to

polyacrylamide is at least 0.5;
(iv) a method of **soil conditioning** comprising application of the diluted stock solution;
(v) a method of **soil conditioning** comprising application of the bulk material.
USE - The bulk material is useful for **conditioning soil**.
ADVANTAGE - The small particle size allows rapid dissolution and even distribution of the polyacrylamide into the **soil**. The combination of polyacrylamide and a calcium salt greatly increases the **soil conditioning** efficiency of the polyacrylamide.
Dwg 0/13

TECH UPTX: 20010410
TECHNOLOGY FOCUS - AGRICULTURE - The polyacrylamide preferably has a molecular weight of at least 15MDa. The particles preferably have a size of +270 mesh and preferably at least 90% of the particles are transparent. The material may also include a calcium salt (especially calcium nitrate, calcium thiosulfate or calcium chloride), **fertilizer** and/or gypsum (preferably with a particle size of -200 mesh). The material is preferably made by subjecting dry granules of the polyacrylamide with a size of +60 to -25 mesh to rapid pressure increases and decreases so that the granules are split into smaller particles. The mono- or di-valent cation salt is preferably a calcium salt solution (especially calcium nitrate, calcium thiosulfate or calcium chloride) and the ratio of calcium:polyacrylamide is preferably 0.5 to 2. The salt solution may also include a **fertilizer** and/or gypsum.

TECHNOLOGY FOCUS - **POLYMERS** - The polyacrylamide preferably has a molecular weight of at least 15MDa.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - The material may also include a calcium salt (especially calcium nitrate, calcium thiosulfate or calcium chloride), and/or gypsum (preferably with a particle size of -200 mesh). The mono- or di-valent cation salt is preferably a calcium salt solution (especially calcium nitrate, calcium thiosulfate or calcium chloride).

L15 ANSWER 14 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2000-505780 [45] WPIDS
DNC C2000-151768
TI Applying compositions to protect plants by reducing threshold temperature at which frost and/or freeze damage occurs by coating plants with compositions comprising heat-releasing **polymer**.
DC A14 A97 **C04** C07
IN BLUM, R D
PA (EGGF-N) EGG FACTORY LLC
CYC 91
PI WO 2000042843 A1 20000727 (200045)* EN 27p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000025029 A 20000807 (200055)
US 6180562 B1 20010130 (200108)
EP 1148781 A1 20011031 (200172) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
BR 2000007625 A 20011106 (200175)
JP 2002534967 W 20021022 (200301) 27p

ADT WO 2000042843 A1 WO 2000-US733 20000113; AU 2000025029 A AU 2000-25029 20000113; US 6180562 B1 US 1999-233056 19990120; EP 1148781 A1 EP 2000-903254 20000113, WO 2000-US733 20000113; BR 2000007625 A BR 2000-7625 20000113, WO 2000-US733 20000113; JP 2002534967 W JP 2000-594317 20000113, WO 2000-US733 20000113

FDT AU 2000025029 A Based on WO 200042843; EP 1148781 A1 Based on WO 200042843; BR 2000007625 A Based on WO 200042843; JP 2002534967 W Based on WO 200042843

PRAI US 1999-233056 19990120

AB WO 200042843 A UPAB: 20000918

NOVELTY - Method of applying a composition to plants comprises coating at least a portion of the surface of the plants with compositions comprising a **polymer** that releases heat over a range of dropping ambient temperatures beginning about 32 deg. F.

ACTIVITY - Plant protectant.

MECHANISM OF ACTION - Anti-frost; anti-freeze.

USE - The method is used to protect plants by reducing the threshold temperature at which frost and/or freeze damage will occur. The compositions may be used on any conventional crop for human and/or animal consumption such as fruits, vegetables, grass and hay, on ornamentals (e.g. flowers and shrubs), in forestation development, erosion protection and diverse industrial applications. They may be used to protect both immature and mature plants as well as severed plant (parts) which are still subject to possible frost and/or freeze damage.

ADVANTAGE - The method provides protection to the plants over a broader range of ambient temperatures and provides an insulating layer that helps retain the heat within the plant structure thus providing greater protection to the plant. The applied compositions may also depress the freezing point of water that might condense and/or collect on plant surfaces after their application. The compositions will provide frost protection for several days before losing some efficacy due to dehydration caused by evaporation of water molecules associated with the **polymers**, but will still maintain their integrity as coatings, thus providing insulating protection to the plant, despite gradually losing their ability to release heat upon encountering freezing conditions. Their ability to release heat upon encountering freezing conditions may be regenerated by remoisturizing them, e.g. by exposure to humid conditions, particularly rain, or **irrigation**.

Dwg.0/1

TECH UPTX: 20000918

TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The **polymer** is a hydrated **polymer** gel. The compositions comprise an aqueous solution of the hydrated **polymer** gel. The compositions comprise water droplets coated with the hydrated **polymer** gel. The compositions comprise foam, preferably further comprising air bubbles with a diameter of 10-100 microns. The hydrated **polymer** gel is a hydrated **copolymer** gel. The hydrated **polymer** gel is formed by hydrolyzing a **polymer**. The hydrated **polymer** gel is hydrolyzed polyacrylonitrile, preferably comprising **acrylic acid** and **acrylamide** groups, especially that is uncrosslinked. alternatively the hydrated **polymer** gel is a hydrolyzed fibrous protein, preferably comprising amino acid and **acrylamide** groups, especially hydrolyzed fibronectin, fibrin or elastin. The compositions further comprise micronutrients, macronutrients, pesticides, insecticides, herbicides, rodenticides, fungicides, biocides, plant-growth regulators, **fertilizers**, microbes, **soil** additives, adhesion-promoting agents, surfactants and freezing-point modifiers. Preferred Method: The range of dropping ambient temperatures is 32-27 degreesF. A composition comprising water droplets coated with the hydrated

polymer gel is applied followed by a composition comprising an aqueous solution of the hydrated **polymer** gel. The compositions are applied by spraying.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Composition: The hydrated **polymer** gel is hydrolyzed polyacrylonitrile, preferably comprising **acrylic acid** and **acrylamide** groups, especially that is uncrosslinked. Alternatively the hydrated **polymer** gel is a hydrolyzed fibrous protein, preferably comprising amino acid and **acrylamide** groups, especially hydrolyzed fibronectin, fibrin or elastin.

L15 ANSWER 15 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2000-205697 [18] WPIDS
DNC C2000-063477
TI **Aqueous soil treatment** composition useful in **fertilizer/soil conditioner** composition comprises water, dissolved ionic water-soluble **fertilizer** and dissolved water-soluble **anionic polymer**.
DC A14 A97 **C04**
IN ROSE, S A H; TURNER, J A
PA (CIBA) CIBA SPECIALTY CHEM WATER TREATMENTS LTD; (ROSE-I) ROSE S A H; (TURN-I) TURNER J A
CYC 85
PI WO 2000008114 A1 20000217 (200018)* EN 24p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 9956183 A 20000228 (200030)
EP 1105443 A1 20010613 (200134) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 2001018047 A1 20010830 (200151)
AU 744421 B 20020221 (200223)
MX 2001001161 A1 20010601 (200235)
US 2002136749 A1 20020926 (200265)
ADT WO 2000008114 A1 WO 1999-EP5126 19990719; AU 9956183 A AU 1999-56183 19990719; EP 1105443 A1 EP 1999-942789 19990719, WO 1999-EP5126 19990719; US 2001018047 A1 Div ex US 1999-361816 19990727, US 2001-838430 20010419; AU 744421 B AU 1999-56183 19990719; MX 2001001161 A1 MX 2001-1161 20010131; US 2002136749 A1 Div ex US 1999-361816 19990727, US 2002-57423 20020124
FDT AU 9956183 A Based on WO 200008114; EP 1105443 A1 Based on WO 200008114; AU 744421 B Previous Publ. AU 9956183, Based on WO 200008114
PRAI GB 1998-16784 19980731
AB WO 200008114 A UPAB: 20000412
NOVELTY - An **aqueous soil treatment** composition comprises water and, in solution, (A) at least 10 wt.% ionic water-soluble **fertilizer**, and (B) a water-soluble **anionic polymer** with an intrinsic viscosity of at least 6 dl/g and is formed from water-soluble monomer or monomer blend of which at least 40 wt.% is anionic monomer.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (a) a **soil treatment** process comprising **irrigating** an area of **soil** with water to which has been added an **aqueous soil treatment** composition as defined above; and (b) a method for the production of an **aqueous**

soil treatment composition as above comprising providing an **aqueous** solution of **fertilizer** (A) and mixing with it **polymer** (B) in powder form.

USE - The **aqueous soil treatment** composition may be applied directly to **soil** as a **fertilizer/soil conditioner** composition but this composition is intended particularly as a concentrate for use in **irrigation**, especially for spray **irrigation**, where **irrigation** water is pumped to a spray manifold and sprayed over a very large crop area.

ADVANTAGE - The viscosity of the **fertilizer** solution is not increased to an inconvenient degree and the **aqueous soil treatment** composition can be processed using the equipment that is in place for processing of solution of **fertilizer** alone. The low viscosity of **polymers** in the composition means that they can be added without difficulty to the **fertilizer** solution at the **fertilizer** production plant. The prevention of excessive viscosity allows the compositions to be processed at the **fertilizer** production plant using conventional equipment.

Dwg.0/0

TECH UPTX: 20000412

TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The **fertilizer** is present in an amount of 20-60 wt.%. This **soil treatment** composition has a viscosity of not more than 4,000 cps, preferably 1,000 cps, more preferably 200-500 cps. The **polymer** (b) is added to the composition in the form of a powder. Preferred Process: The **irrigation** is furrow **irrigation**, drip **irrigation** or spray **irrigation**. The water is pumped through the feed ducting and a mixing zone to a spray manifold supplying one or more spraying devices by which the water is sprayed onto a crop area and the **aqueous soil treatment** composition is metered into the water at or before the mixing zone.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Polymer**: The water-soluble **anionic polymer** has an intrinsic viscosity of 8-18 dl/g, preferably 9-12 dl/g and is formed from water-soluble monomer or monomer blend comprising at least 50 wt.% anionic monomer, preferably 60-80 wt.% anionic monomer and from 40-20 wt.% non-ionic monomer. The **polymer** is a **copolymer** of **acrylamide** with an alkali metal salt of **acrylic acid** and is present in an amount of 2-5 wt.%.

L15 ANSWER 16 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2000-119403 [11] WPIDS
DNC C2000-037122
TI **Soil** process agent used as **soil conditioner**, erosion inhibitor and vegetation promoter - consists of acryl group water-soluble **copolymer** obtained by emulsion polymerization of unsaturated carboxylic acid and copolymerizable monomer followed by neutralization.
DC A14 A97 **C04**
PA (SHOP) SHOWA HIGH POLYMER CO LTD
CYC 1
PI JP 11323331 A 19991126 (200011)* 6p
ADT JP 11323331 A JP 1998-100393 19980327
PRAI JP 1998-82482 19980313
AB JP 11323331 A UPAB: 20000301

NOVELTY - A soil processing agent consists of acryl group water-soluble **copolymer** obtained by emulsion polymerization of 2-50 weight parts of an unsaturated carboxylic acid (A) and 50-90 wt. pts. of copolymerizable monomer (B) followed by neutralization of the

copolymer dispersion with an alkaline water solution.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (i) soil improvement or soil erosion control method. The soil process agent containing 1-10 weight percent of water-soluble **copolymer**, 0.5-10 liter of **aqueous** solution and other additives is mixed with 1 m3 of soil and applied to soil surface; (ii) vegetation of soil. The soil process agent containing water-soluble **copolymer**, **fertilizer** and other additives is applied to the seed for vegetation.

USE - The soil process agent is used for soil improvement, soil erosion control and soil vegetation promotion (claimed) along roads, housing sites and railroads.

ADVANTAGE - The agent has excellent low temperature viscosity **stability**, freeze thaw **stability** and water resistance. The **soil** process agent improves the softness, air permeability, granulation and water retention of **soil**. The **soil** process agent effectively controls **soil** erosion and contributes to perfect **soil** vegetation.

Dwg.0/0

L15 ANSWER 17 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 2000-097522 [08] WPIDS
DNN N2000-075362 DNC C2000-028313
TI Absorbent **polymers** loaded with cyclodextrin compounds useful e.g. in medical and hygiene articles, packaging materials, plant cultivation and soil improvement.
DC A14 A96 A97 B04 **C04** C07 D22 E13 F07 P34
IN BRUHN, C; HERRMANN, E; ISSBERNER, J; KERSTEN, D; MERTENS, R; WERNER, G
PA (CHFS) STOCKHAUSEN GMBH & CO KG
CYC 85
PI WO 9964485 A1 19991216 (200008)* DE 31p
RW: AT BE CH CY DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
DE 19825486 A1 20000203 (200013)
AU 9943708 A 19991230 (200022)
DE 19825486 C2 20000706 (200035)
NO 2000006184 A 20001205 (200112)
BR 9911077 A 20010220 (200114)
EP 1091983 A1 20010418 (200123) DE
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
MX 2000011526 A1 20010601 (200235)
ADT WO 9964485 A1 WO 1999-EP3705 19990528; DE 19825486 A1 DE 1998-19825486 19980608; AU 9943708 A AU 1999-43708 19990528; DE 19825486 C2 DE 1998-19825486 19980608; NO 2000006184 A WO 1999-EP3705 19990528, NO 2000-6184 20001205; BR 9911077 A BR 1999-11077 19990528, WO 1999-EP3705 19990528; EP 1091983 A1 EP 1999-926461 19990528, WO 1999-EP3705 19990528; MX 2000011526 A1 MX 2000-11526 20001123
FDT AU 9943708 A Based on WO 9964485; BR 9911077 A Based on WO 9964485; EP 1091983 A1 Based on WO 9964485
PRAI DE 1998-19825486 19980608
AB WO 9964485 A UPAB: 20000215

NOVELTY - Absorbent **polymers**, which are based on optionally partially neutralized, monoethylenic monomers carrying acid groups and having a re-cross-linked surface, and which are loaded with cyclodextrin compounds by covalent or ionic bonding or by inclusion are new.

DETAILED DESCRIPTION - An absorbent **polymer** based on optionally partially neutralized, monoethylenic monomers carrying acid

groups and having a re-cross-linked surface contains covalently or ionically bonded or enclosed cyclodextrins and/or their derivatives (I).

An INDEPENDENT CLAIM is also included for the preparation of the absorbent **polymer**.

USE - The absorbent **polymer** is useful for the absorption of **aqueous** fluids, preferably body fluids, in optionally foamed paper sheets, in packaging materials, e.g. for meat and fish, and in hygiene articles. They can also be used in plant cultivation, as **soil** improvers and as carriers or **stabilizers** for active substances or optionally retarded **fertilizers**.

ADVANTAGE - The absorbent **polymers** contain supramolecular hollow cavity molecules and bind and retain odor-producing fluids, e.g. urine, better than prior art cyclodextrin-containing products. Also, they do not contain components which are carcinogenic or otherwise harmful to health.

Dwg.0/0

TECH UPTX: 20000215

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Polymer**: The absorbent **polymer** contains 0.01-50 wt. %, especially 0.1-30 wt. %, particularly 0.5-10 wt. % (I). A maximum of 85 wt. %, especially of 60 wt. %, particularly of 45%, of (I) in the **polymer** is extractable. (I) are preferably bonded covalently or ionically, especially cationically, via carboxylate, sulfate, sulfonate or quaternary amino groups. The non-loaded **polymer**, i.e. without (I), contains up to 40 wt. % of monoethylenic comonomers different from those carrying acid groups. It can also contain 0.05-3 wt. % of a monopolymerised cross-linked monomer, up to 30 wt. % of a mono- and/or graft-polymerised water-soluble natural or synthetic **polymer** and/or 0.1-10 wt. % of a cross-linking agent.

Preferred Cyclodextrins: (I) are alpha-, beta- and/or gamma-cyclodextrins or their derivatives obtained e.g. by alkylation with a 1-22C alkyl halide or an alkylene oxide. Preparation: The absorbent **polymer** is prepared by carrying out the radical polymerisation of an **aqueous** solution of an optionally partially neutralized, monoethylenic monomers carrying acid groups (optionally together with the different monoethylenic comonomers, cross-linking monomers and/or water-soluble natural or synthetic **polymers**) and optionally isolating, comminuting and drying the **polymer** obtained, with (I) being present during a surface cross-linking of the **polymer** or the surface cross-linked **polymer** being treated with an ionic cyclodextrin derivative (I). (I) can be added before or during the polymerisation or to a hydrogel which may be obtained or to an optionally milled and dried polymerisate before or during a surface cross-linking. (I) can be used in solid form or as a solution.

L15 ANSWER 18 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1999-357791 [30] WPIDS
DNC C1999-105867
TI Stabilized organic **polymer** comprises phenol-formaldehyde-polyethylene for removing pesticides from **aqueous** solutions.
DC A21 A25 A97 **C04** C07 D15
IN CISAR, J L; ELIZER, M C; ELLIOTT, C; SNYDER, G H
PA (CALC-N) CALCIUM SILICATE CORP; (UYFL) UNIV FLORIDA
CYC 82
PI WO 9926885 A1 19990603 (199930)* EN 94p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG

US UZ VN YU ZW
AU 9916042 A 19990615 (199944)
ADT WO 9926885 A1 WO 1998-US25131 19981124; AU 9916042 A AU 1999-16042 19981124
FDT AU 9916042 A Based on WO 9926885
PRAI US 1997-66692P 19971124
AB WO 9926885 A UPAB: 19990802
NOVELTY - Stabilized organic **polymer** (SOP) comprises phenol-formaldehyde-polyethylene.
DETAILED DESCRIPTION - Stabilized organic **polymer** comprises phenol-formaldehyde-polyethylene.
INDEPENDENT CLAIMS are also included for:
(1) a composition comprising the SPO bound to a matrix;
(2) a system for treating water to remove organic pollutants, comprising:
(a) an inlet port;
(b) one or more chambers comprising the above composition in an amount to remove the pollutants; and
(c) an outlet port;
(3) a filtration device for reducing the concentration of a pesticidal compound in an **aqueous** solution comprising an inlet port, a chamber comprising the above composition in an amount to remove the pesticidal compound, and an outlet port;
(4) a system for removing a pesticidal compound from a leachate comprising:
(a) a leachate supply source,
(b) a water impervious treatment basin which slopes from a high end to a low end,
(c) a treatment medium comprising the above composition in an amount to remove the pesticidal compound;
(d) an inlet flow control connected to the leachate supply source and the high end of the basin allowing the leachate to penetrate and flow vertically and horizontally through the medium; and
(e) an outlet flow control with a drain at the low end of the basin to collect and drain the treated leachate; and
(5) a controlled release **fertilizer** comprising SOP.
USE - For binding to pesticidal compounds to remove them from **aqueous** systems such as agricultural lechate, waste water, water, sewage, groundwater or industrial runoff. The composition can be incorporated into filtration devices and water **treatment** systems or used to amend **soil** (preferably under golf courses, in turf grass or in agricultural fields) to prevent leaching. SOP can also be used in controlled release **fertilizers**.
Dwg.0/9
TECH UPTX: 19990802
TECHNOLOGY FOCUS - AGRICULTURE - Preferred Composition: The **polymer** can bind to a pesticide preferably an insecticide, herbicide (especially 2,4-dichlorophenoxyacetic acid or Dicamba), fungicide or nematocide (especially fenamiphos). The composition is in a water treatment device or barrier. The matrix comprises a silicate, sand, sea sand, rock, gravel, clay, expanded clay, silica gel, zeolite, metal, filtercake (especially obtained from processed sugar cane), plastic or glass.
Preferred **Fertilizer**: The **fertilizer** is an organophosphate.

L15 ANSWER 19 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1999-339910 [29] WPIDS
DNC C1999-100166
TI Basic liquid **soil conditioners** containing extremely

fine calcium carbonate or magnesium oxide.
DC A14 A97 **C04**
IN CHANTEGRET, C
PA (MEAC-N) GRP MEAC; (MEAC-N) MEAC SA
CYC 25
PI EP 924176 A1 19990623 (199929)* FR 18p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
FR 2772749 A1 19990625 (199932)
ADT EP 924176 A1 EP 1998-204211 19981211; FR 2772749 A1 FR 1997-16426 19971218
PRAI FR 1997-16426 19971218
AB EP 924176 A UPAB: 19990723
NOVELTY - Basic liquid **soil conditioners** comprise an **aqueous** suspension of calcium carbonate or dolomite or their mixtures, or extremely fine magnesium oxide, the median particle size being less than 10 microns.
ACTIVITY - A **soil** having an initial pH of 4.8, and a content of exchangeable CaO of 880 ppm, was **treated** with very finely divided calcium carbonate and after 3 months the **soil** was of pH 5.5 and had a content of exchangeable CaO of 1805 ppm.
USE - **Soil conditioners** to lower adjust pH and improve **stability**.
ADVANTAGE - The **conditioners** give a very rapid effect, better balance in the **soil**, and better yields of crops. The material is applied with accurate dosing and with less environmental risks.
Dwg.1/1
TECH UPTX: 19990723
TECHNOLOGY FOCUS - AGRICULTURE - Preferred **soil conditioners**: The average particle size is below 3 microns. The **conditioner** may further contain other additives, such as magnesium carbonate, alkali or alkaline earth metal sulfates, and potassium salts, as well as dispersing or anti-sedimentation agents, colors, **fertilizers**, anti-evaporation agents, antifreeze agents, and bactericides.
Suitable dispersing agents are (meth)acrylic **polymers** and **copolymers** and their salts, and suitable anti-sedimentation agents are natural or synthetic thickeners such as (meth)acrylic **copolymers**.

L15 ANSWER 20 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1995-329567 [43] WPIDS
DNC C1995-146157
TI Converting liq. pig manure to artificial fertiliser - by addn. of soln. of phosphorus pent oxide and potassium oxide followed by cpd. retaining water and drying.
DC A97 **C04** D16
IN MARCHESE, E
PA (MARC-I) MARCHESE E; (PUGL-N) PUGLIESE FRERES SARL; (PUGL-N) ENTREPRISE PUGLIESE FRERES SARL; (SCKE-N) SC KHEPER BIOTECHNOLOGIES; (SCKH-N) SC KHEPER BIOTECHNOLOGIES
CYC 21
PI EP 672641 A1 19950920 (199543)* FR 6p
R: AT BE CH DE DK ES GB GR IE IT LI LU MC NL PT SE
FR 2717173 A1 19950915 (199543)
JP 07277867 A 19951024 (199551) 3p
CA 2144234 A 19950911 (199606) FR
US 5593473 A 19970114 (199709)
CN 1112098 A 19951122 (199737)
EP 672641 B1 20010829 (200150) FR

R: AT BE CH DE DK ES GB GR IE IT LI LU MC NL PT SE
DE 69522353 E 20011004 (200166)
ADT EP 672641 A1 EP 1995-400432 19950228; FR 2717173 A1 FR 1994-2797 19940310; JP 07277867 A JP 1995-50006 19950309; CA 2144234 A CA 1995-2144234 19950308; US 5593473 A US 1995-401901 19950310; CN 1112098 A CN 1995-102457 19950309; EP 672641 B1 EP 1995-400432 19950228; DE 69522353 E DE 1995-622353 19950228, EP 1995-400432 19950228
FDT DE 69522353 E Based on EP 672641
PRAI FR 1994-2797 19940310
AB EP 672641 A UPAB: 19970516
Liq. pig manure is converted to fertiliser by: (a) adding to the manure a soln. of P2O5 and K2O; (b) mixing the soln. with a prod. which can retain water, in the form required in the final prod., to give a shaped, **conditioned** fertiliser, which is (c) dried. The ratio of P2O5 and K2O in the soln. is such as to give the required ratio of N, P and K in the final prod., and is a function of the nature of the **soil** and the method of application.
ADVANTAGE - The liq. manure is converted to a fertiliser contg. 8-30% minerals, 4-10% organic matter, 4-10% total N, 4-10% P2O5, 2-10% K2O, and 0.3-0.5% ammoniacal N, the rest being **polymer**.
Dwg.0/0

L15 ANSWER 21 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1992-366146 [44] WPIDS
DNC C1992-162565
TI Composite comprises substrate and elastomeric coating - which is ionically and covalently crosslinked and comprises neutralised sulphonated **polymer** or interpolymer complex of sulphonated **polymer** and amine contg. **polymer**.
DC A97 **C04** C07
IN DRAKE, E N; ELSPASS, C W; GEIGER, A J; KRESGE, E N; MANALASTAS, P V; SWARUP, V; THALER, W A
PA (ESSO) EXXON RES & ENG CO
CYC 17
PI WO 9217423 A1 19921015 (199244)* EN 53p
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE
W: CA NO
US 5256181 A 19931026 (199344) 16p
EP 576469 A1 19940105 (199402) EN
R: BE DE DK FR GB IT NL
NO 9303439 A 19931126 (199408)
EP 576469 A4 19940914 (199533)
ADT WO 9217423 A1 WO 1992-US52 19920103; US 5256181 A US 1991-676684 19910328; EP 576469 A1 EP 1992-906242 19920103, WO 1992-US52 19920103; NO 9303439 A WO 1992-US52 19920103, NO 1993-3439 19930927; EP 576469 A4 EP 1992-906242
FDT EP 576469 A1 Based on WO 9217423
PRAI US 1991-676684 19910328
AB WO 9217423 A UPAB: 19931116
Composite comprises: (a) a substrate; and (b) an ionically and covalently crosslinked, neutralised sulphonated polymeric coating for the substrate having a thickness of 1-100 microns.
Also claimed is a process for forming an ionically and covalently crosslinked elastomeric coating on a substrate where the coating is a sulphonated **polymer** or an interpolymer complex of a sulphonated **polymer** and an amine contg. **polymer**, comprising: (a) forming an organic soln. of a water insoluble sulphonated **polymer** or a water insoluble interpolymer complex of a sulphonated **polymer** and an amine contg. **polymer** and a covalent crosslinking agent having a min. activation temp. of 40 deg.C; (b) coating drying below the activation temp.; and (c) covalently crosslinking at above the activation

temp. of the covalent crosslinking agent.

USE/ADVANTAGE - The coating can be used as a barrier to create desired slow release for many types of fertilisers, micronutrients or other solid materials either individually and/or in mixts. esp. in liquid cultures, i.e. hydrophobics, **soil**-less cultures and any mixt. of sand, vermiculite, peat, perlite, or any other inert or relatively inert support, and solids which can be either **irrigated** or rainfed **soils**. Use of the coating decreases dissolution of soluble fertiliser components, increases fertiliser use efficiency and decreases losses of the added fertiliser from the plant growth mediu
Dwg.0/4

L15 ANSWER 22 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1992-358553 [44] WPIDS
DNC C1992-159147
TI Particulate crosslinked N-vinyl amide resin - has excellent chemical stability and solvent affinity, useful as thickeners, dispersion stabilisers and lubricants.
DC A14 B07 **C04** C07 D21 D25 G03 H07
IN AIZAWA, T; NAKAMURA, H; YAMAGUCHI, T
PA (SHOW) SHOWA DENKO KK
CYC 5
PI EP 510246 A1 19921028 (199244)* EN 31p
R: DE FR GB
JP 04323213 A 19921112 (199252) 22p
US 5280095 A 19940118 (199404) 14p
US 5338815 A 19940816 (199432)
EP 510246 B1 19960925 (199643) EN 30p
R: DE FR GB
DE 69122377 E 19961031 (199649)
JP 3042546 B2 20000515 (200028) 20p
ADT EP 510246 A1 EP 1991-112072 19910718; JP 04323213 A JP 1991-92325 19910423; US 5280095 A US 1991-723038 19910628; US 5338815 A Div ex US 1991-723038 19910628, US 1993-159242 19931130; EP 510246 B1 EP 1991-112072 19910718; DE 69122377 E DE 1991-622377 19910718, EP 1991-112072 19910718; JP 3042546 B2 JP 1991-92325 19910423
FDT US 5338815 A Div ex US 5280095; DE 69122377 E Based on EP 510246; JP 3042546 B2 Previous Publ. JP 04323213
PRAI JP 1991-92325 19910423
AB EP 510246 A UPAB: 19931116
A fine particulate crosslinked type N-vinylcarboxylic acid amide resin, average particle size 10 micron or less, comprising backbone chains of repeating units of (A) and opt. (B). In the formulae R1, R2, R3 = H, methyl; X = -COOY (Y = H, alkali metal, 1-18C alkyl, lower alkyl substd. with OH, dialkylamino or quat. ammonium), -CONHZ (Z = H, lower alkyl substd. with dialkylamino, quat. ammonium, sulphonic acid or alkali metal salt), cyano, 2-ketopyrrolidinyl, lower alkoxy, lower acyl, lower alkoxy-carbonyl, lower alkyl substd. with sulphonic acid or alkali metal salt; M = H, alkali metal, ammonium; provided that when R3 = methyl, X = -COOY, -CONHZ; p = 0, 1; molar ratio m:n = 3-100:70-0.

The backbone chain pref. has average polymerisation degree 100-500,000 and the resin has crosslinking density 1/10-1/10,000. The organic solvent is a single solvent, solvent polarity parameter ET45 or more, or a mixed liquid, ET43 or more.

USE/ADVANTAGE - The resin has excellent chemical **stability** and affinity for water and organic solvents such as alcohols, partic. exhibiting high thickening ability, dispersion **stability** and lubricity. Uses include detergents, toiletries, cosmetics, pharmaceuticals, seed coating, **fertilizers**, **soil** improvement, lubricants, glues and electrolyte supports.

0/0
Dwg.0/0

L15 ANSWER 23 OF 23 WPIDS (C) 2003 THOMSON DERWENT
AN 1979-51821B [28] WPIDS
TI Industrial waste sludge **treatment** and utilisation - comprising adding olefinic **copolymer aq**. soln. to agglomerate fine particles, drying, grinding and using e.g. as fertiliser or **soil**.
DC A97 **C04** D15
PA (KAWA-I) KAWAMURA S
CYC 1
PI JP 54069573 A 19790604 (197928)*
PRAI JP 1977-136924 19771114
AB JP 54069573 A UPAB: 19930901
An **aqueous** solution of an olefinic **copolymer** containing polar groups is added to and mixed with sludge discharged from various manufacturing processes and processing lines. The water-soluble olefinic resin is converted into insoluble resin and at the same time covers the surfaces of fine particles in the sludge to bring about the agglomeration of fine particles which confers good water resistance and high permeability upon the fine particles. The mixed sludge is dried. The dried sludge is ground and classified into appropriate grain size fractions.
USE
The dried sludge, as powder or granules, is utilized as an artificial soil or a slow- or fast-acting **fertilizer**, or used for the recovery of valuable substances present in sludge particles.
ADVANTAGE
This method gives rapid and easy drying of moist sludge and allows effective application of the dried sludge.